

Tom Morris's

INDUSTRIAL INSULATION

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Carey



sales offices and distributing points

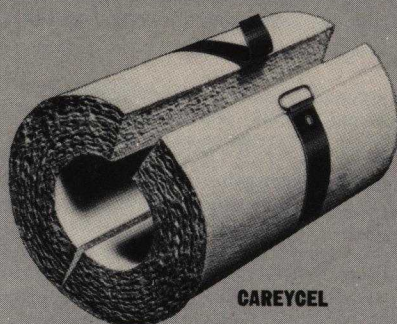
AKRON, OHIO—The Asbestos Supply Co.
APPLETON, WISCONSIN—Bartelt Asbestos & Cork Co.
BALTIMORE, MARYLAND—McCormick Asbestos Co.
BIRMINGHAM, ALABAMA—The Young & Vann Supply Co.
BOSTON, MASSACHUSETTS—Curtis Asbestos Company
BRIDGEPORT, CONNECTICUT—Asbestos Distributors Corp.
BUFFALO, NEW YORK—Frontier Insulation & Roofing Co.
CHARLESTON, WEST VIRGINIA—Capital City Supply Co.
CHATTANOOGA, TENNESSEE—Hajoca Corp.
CHATTANOOGA, TENNESSEE—Railey Insulation Co.
CHICAGO, ILLINOIS—Illinois Roofing & Insulation Co.
CHICAGO, ILLINOIS—Paul J. Krez Co.
CINCINNATI, OHIO—R. E. Kramig & Co.
COLUMBUS, OHIO—Earl E. Bright
DAVENPORT, IOWA—Economy Roofing & Insulating Co.
DAYTON, OHIO—Crawford Insulation Co.
DENVER, COLORADO—Rocky Mountain Supply Co.
DES MOINES, IOWA—Madden Insulation Co.
DULUTH, MINNESOTA—Christofferson Sons Co.
EL PASO, TEXAS—Momsen-Dunnegan-Ryan Co.
EVANSVILLE, INDIANA—General Insulation Co.
FORT WAYNE, INDIANA—Asbestos Insulation & Roofing Co.
FORT WORTH, TEXAS—E. O. Wood & Co.
GRAND RAPIDS, MICHIGAN—Alexander-Stafford Corp.
GREENSBORO, NORTH CAROLINA—Starr Davis Co.
GRUNDY, VIRGINIA—Buckhannon-Williamson Supply Co.

HARTFORD, CONNECTICUT—The Insulation Co.
HOUSTON, TEXAS—B & B Engineering & Supply Co., Inc.
HUNTINGTON, WEST VIRGINIA—Banks-Miller Supply Co.
JACKSON, MICHIGAN—Jackson Insulation Co.
JACKSON, MISSISSIPPI—Stokes Engineering, Inc.
JACKSONVILLE, FLORIDA—Cameron & Barkley Co.
JAMESTOWN, NEW YORK—Laco Roofing & Asbestos Co.
JOHNSTOWN, PENNSYLVANIA—Quaker Sales Corp.
KANSAS CITY, MISSOURI—Kelley Asbestos Products Co.
KNOXVILLE, TENNESSEE—A. G. Heins Co.
LANSING, MICHIGAN—Garlock Insulating Co.
LITTLE ROCK, ARKANSAS—United Insulating Co.
LOS ANGELES, CALIFORNIA—Warren & Bailey Co.
LOUISVILLE, KENTUCKY—Louisville Builders Supply Co.
MADISON, WISCONSIN—Johnson Insulating Co.
MEMPHIS, TENNESSEE—Fischer Lime & Cement Co.
MEMPHIS, TENNESSEE—Goheen Roofing & Insulation Co.
MIAMI, FLORIDA—Cameron & Barkley Co.
MINNEAPOLIS, MINNESOTA—Asbestos Insulation & Supply Co.
MILWAUKEE, WISCONSIN—Industrial Roofing & Insulation Co.
MOBILE, ALABAMA—Gulf States Insulation Co.
MOBILE, ALABAMA—Turner Supply Co.
NASHVILLE, TENNESSEE—T. L. Herbert & Sons
NEW ORLEANS, LOUISIANA—J. J. Clarke Company, Ltd.
NEW ORLEANS, LOUISIANA—Orleans Insulation & Sales Co.
NEW YORK, NEW YORK—Robert A. Keasbey Co.

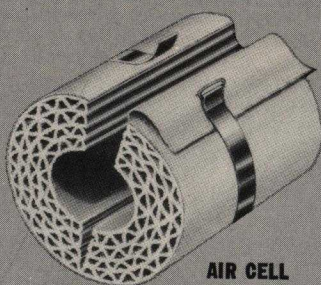
NORFOLK, VIRGINIA—C. E. Thurston & Sons, Inc.
NORRISTOWN, PENNSYLVANIA—Asbestos Insulating Co.
OAKLAND, CALIFORNIA—Silicair Insulation Co.
PEORIA, ILLINOIS—Sprinkmann Sons Corporation of Illinois
PHOENIX, ARIZONA—A. N. Borgquist
PORT CHESTER, NEW YORK—Asbestos Distributors, Inc.
PORTLAND, OREGON—Pacific Asbestos & Supply Co.
RACINE, WISCONSIN—Badger Roofing & Siding Co.
RICHMOND, VIRGINIA—Virginia Insulation Co.
ROCHESTER, NEW YORK—Elmer W. Davis Co.
SAN FRANCISCO, CALIFORNIA—Chas. Ayres Co.
SEATTLE, WASHINGTON—Chas. R. Brower & Co.
SEATTLE, WASHINGTON—Pioneer Sand & Gravel Co., Inc.
SPOKANE, WASHINGTON—Nott-Atwater Co.
SOUTH BEND, INDIANA—The General Roofing & Insulation Co., Inc.
TACOMA, WASHINGTON—Geo. Scofield Co.
TACOMA, WASHINGTON—Tacoma Asbestos Co.
TAMPA, FLORIDA—Asbestos Insulating Co.
TAMPA, FLORIDA—Cameron & Barkley Co.
TOLEDO, OHIO—The George L. Freeman Co.
WATERLOO, IOWA—J. A. Neymeyer
WAUSAU, WISCONSIN—Asbestos Supply Co.
WILLIAMSON, WEST VIRGINIA—Williamson Supply Co.
WILMINGTON, DELAWARE—Delaware Insulation Co.
YOUNGSTOWN, OHIO—Stanley P. Davis Co.

★ STEAM AND HOT WATER INSULATION

low pressure steam and hot water surfaces—(100° F. to 300° F.)



CAREYCEL



AIR CELL

CAREYCEL Low cost, high efficiency pipe coverings and blocks designed especially to insulate pipes, boilers, insulated metal boiler jackets, ovens and other apparatus carrying temperatures of not over 300° F.

Furnished in 36-in.-long pipe covering sections with cotton duck jacket and bands in all pipe sizes. Standard thickness, 1 in. **Blocks** 6 x 36 in. sheets 36 x 36 in. or special sizes to order. Thicknesses from ½ in. up.

efficiency of Careycel pipe covering

STEAM PRESSURE		HOT WATER		10 LBS.		80 LBS.		120 LBS.	
STEAM TEMP. ° F. TEMP. DIFF. ° F.		180° F. 100° F.		239.4° F. 159.4° F.		324.0° F. 244.0° F.		350.0° F. 270.0° F.	
Insulation Thickness in.	Pipe Size in.	% Eff.	Loss	% Eff.	Loss	% Eff.	Loss	% Eff.	Loss
1	3	78.3	43.7	80.0	73.5	82.2	120.4	82.8	135.9
1	6	79.9	73.4	81.3	123.6	83.5	202.5	84.0	228.9
1	12	80.5	131.0	82.0	220.6	84.1	362.0	84.6	409.0

(The columns headed "loss" give the loss in Btu. per lineal foot of pipe at the temperature difference indicated, per hour.)

CAREY AIR CELL—4 ply per in.

CAREY EXCEL—6 ply per in. Low cost corrugated asbestos insulation for heating system pipes, boilers, tanks, etc.

AIR CELL furnished in 36-in. long sections in ½, ¾, and 1-in. thickness, with cotton duck jacket and bands. Also in blocks and sheets same as Careycel.

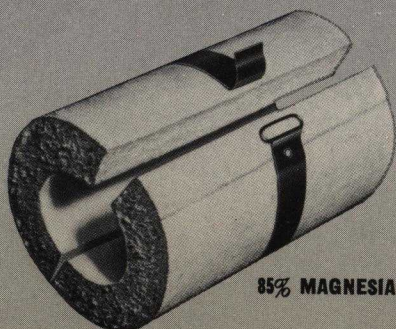
EXCEL furnished in 36-in. long sections in ½ and 1-in. thickness, with cotton duck jacket and bands. Also in blocks and sheets same as Careycel.

NOTE: All Carey pipe coverings are made to fit Copper Tubing as well as iron pipe in the following kinds and sizes:

85% Magnesia—Iron Pipe: From ¾ in. nominal diameter up. Copper Tubing: From ½ in. nominal diameter to and including 6 in.

All Laminated Felt Coverings—Iron Pipe: From ¾-in. nominal diameter up. Copper Tubing: From ½-in. nominal diameter up.

high and medium pressure steam surfaces—(200° F. to 600° F.)



85% MAGNESIA



ASBESTOS SPONGE

CAREY 85% MAGNESIA The highest quality molded heat insulation for medium and high pressure steam surfaces—temperatures up to 600° F. For higher temperatures use Tempchek and 85% Magnesia combination covering. (See Page 4.) See pages 15 and 23 for sizes, thicknesses etc.

CAREY 85% MAGNESIA is a molded composition of not less than 85% basic carbonate of magnesia and approximately 15% asbestos fibre in conventional filter molded and Super-Light precision molded types.

Furnished in sections and segments for covering pipes. Flat block furnished in standard sizes of 6 x 36 in., 6 x 18 in. and 3 x 18 in. in thickness from ¾ to 3½ in. Curved blocks (for 30 to 96-in. diameters) furnished in 6-in. width and lengths up to 42 in. Cements for irregular surfaces are described on Pages 8 and 9.

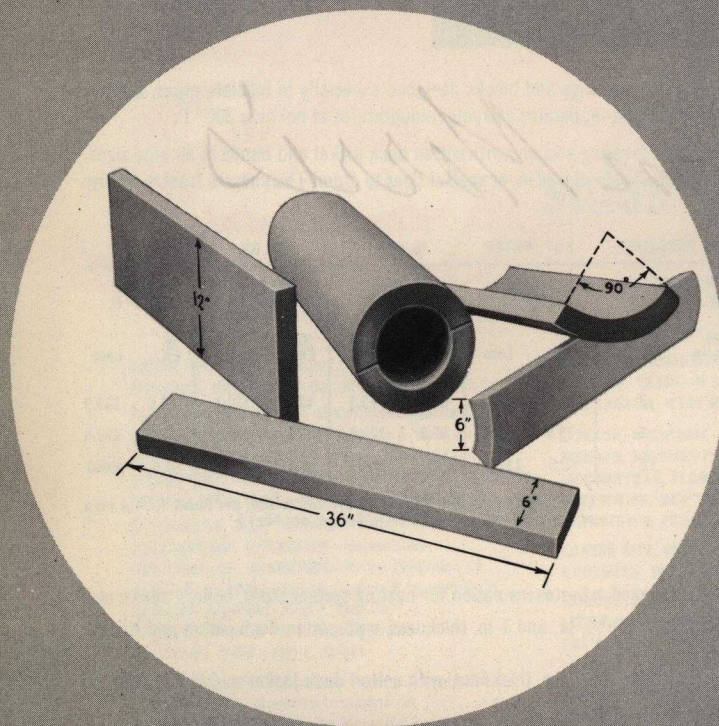
CAREY ASBESTOS-SPONGE Highly efficient all-asbestos heat insulation for medium and high pressure steam surfaces with a tough flexible structure to prevent damage in service. Will withstand more abuse than molded insulation.

ASBESTOS-SPONGE consists of numerous layers of fine asbestos felts firmly bonded with narrow strips of heat-proof adhesive spaced approximately 3 in. apart. This construction gives a minimum area of contact between solid particles in successive layers and a maximum resistance to transfer of heat by conduction.

Furnished in 36-in. long sections, including cotton duck jacket and bands, for all pipe sizes in thicknesses of 1, 1½, 2-in. (single or double layer), 2½ and 3-in. (double layer only). Blocks 6 x 36 in. and sheets 36 x 36 in. in thicknesses from 1 to 3-in. inclusive are furnished for large surfaces.

Carey

HIGH TEMPERATURE INSULATION



Carey Tempchek — (600°F. to 1500°F.)

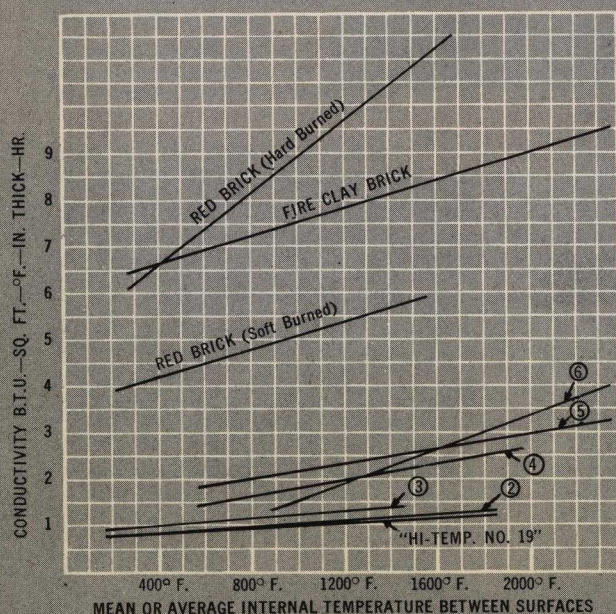
Carey Tempchek consists of specially treated silicas combined with asbestos fibers and bonding agents and molded into commercial-size blocks and pipe covering sections. The silica formulation provides the basis for heat resistance, permanence, low shrinkage, and low thermal conductivity of Tempchek—a new and improved product, primarily designed for better insulation service for modern high temperature power plants and process industries operating with temperatures up to 1500° F.

PHYSICAL PROPERTIES—Non-corrosive either wet or dry—crushing strength—cold, approximately 83 lbs. per square inch; at 1500°, approximately 81 lbs. per square inch—temperature limit 1500° F.—heat expansion up to 1500° F.—none—heat shrinkage at 1000° F.—0.46%; at 1500° F.—1.17%—flexural strength—50-57 lbs. per square inch—tough structure with excellent “workability”.

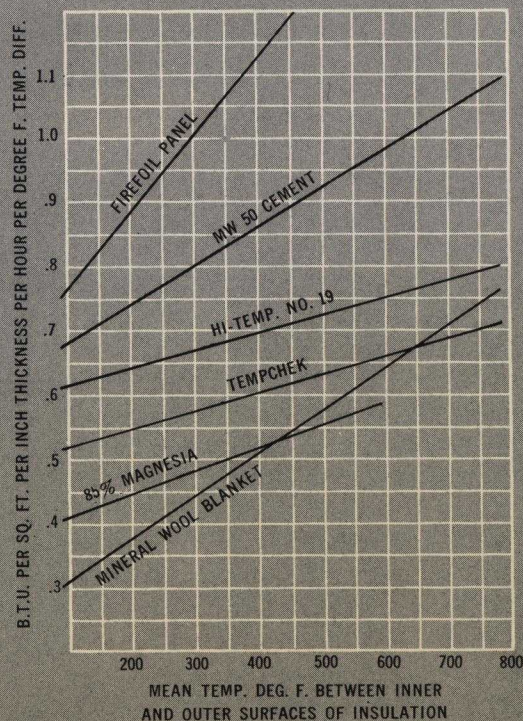
AVAILABLE COMMERCIAL SHAPES

- Blocks, flat, 6 in. wide by 36 in. long, 1 to 3½ in. thickness.**
- Blocks, flat, 12 in. wide by 36 in. long, 1½ to 3½ in. thickness.**
- Blocks, curved from 36 to 96 in. diameter, 6 in. wide by 36 in. long, 1½ to 2½ in. thickness.**
- Pipe Covering, in semi-cylindrical sections 36 in. long, 1½, 2 and 2½ in. thick, for pipes up to and including 10 in. size.**
- Pipe Covering, curved segmental blocks, approximately 6 in. wide and 36 in. long, 1½ to 2½ in. thick inclusive, for pipe sizes 12 to 30 in. inclusive.**

conductivity graph of Carey Hi-Temp No. 19 and other structural and refractory materials



Conductivity of brick and insulating material: (2) Diatomaceous Earth Brick; (3) Natural Diatomaceous Earth Brick and best grade Bonded Diatomaceous Earth Brick; (4) Calcined Diatomaceous Earth Brick (2500° F.); (6) Bonded and Burned Diatomaceous Earth Brick (2500° F.).



★ SUPER HEAT INSULATION

segments per section—all thicknesses

12" pipe size	8 segments	22" pipe size	13 segments
14" pipe size	9 segments	24" pipe size	15 segments
16" pipe size	10 segments	26" pipe size	16 segments
18" pipe size	11 segments	28" pipe size	17 segments
20" pipe size	12 segments	30" pipe size	18 segments

PIPE COVERING, 4 segments 36 in. long per section, in 1½ and 2 in. thicknesses only, for pipe sizes 12, 14 and 16 in. only.

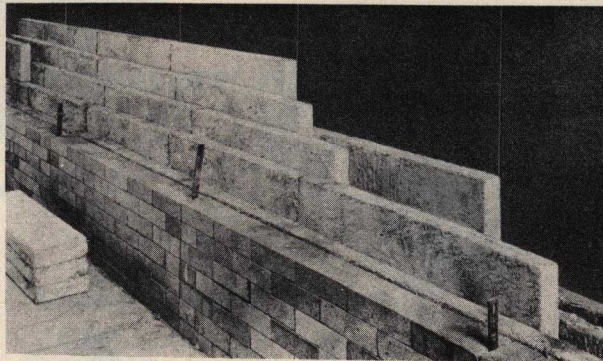
CEMENT, in dry powder form, in 60-lb. bags—covering capacity approximately 50 sq. ft. 1 in. thick per cwt.

USES FOR CAREY TEMPCEK As a first layer in combination with 85% magnesia where temperatures exceed 600° F. such as superheated steam lines; hot oil lines, stills, ovens, boiler breaching, furnaces, kilns, lehrs, regenerating chambers, ducts, etc. See pages 12 and 14 for recommended combinations.

CAREY HI-TEMP No. 19 BLOCKS—(Temperatures up to 1900° F.)

Carey Hi-Temp No. 19 is made of a controlled mixture of pre-calcined diatomaceous earth, asbestos fiber, and bonding materials molded into flat and curved blocks for insulating stills, ovens, furnaces, kilns, regenerating chambers, etc. where exposed to temperatures from 1500° F. to 1900° F. Standard-size blocks are 6" x 36" in thicknesses 1" to 3½". Other widths and thicknesses available. Cement in dry powder form is also available.

ANNEALING FURNACE—Showing Multiple Layer Block Installation Between Refractory Block and Steel Casing.

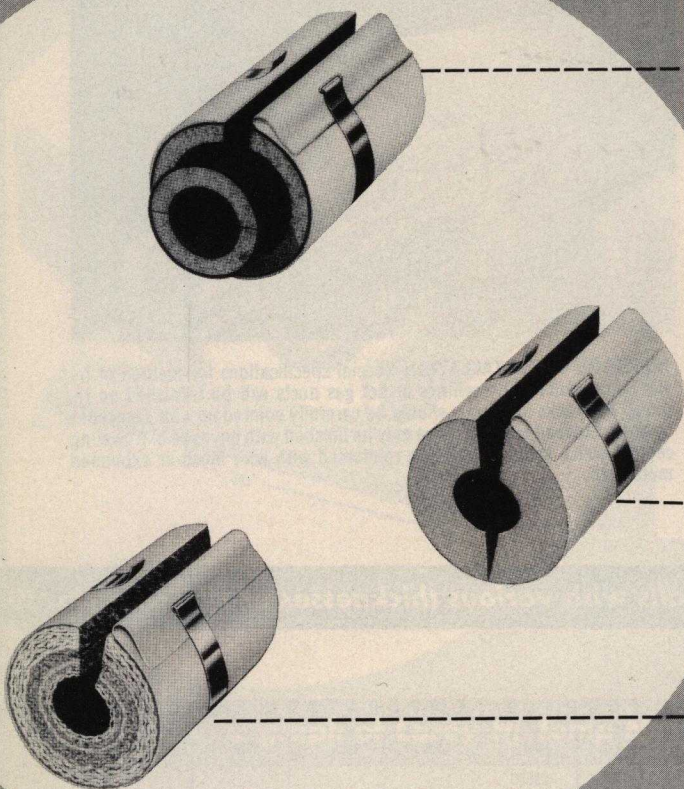


METHODS OF INSTALLATION Special specifications for method of installation inside of breechings or hot gas ducts will be furnished on request. All cracks and joints should be carefully pointed up with TempceK cement. Exposed block surfaces may be finished with any type of troweling cement which should always be reinforced with wire mesh or expanded metal lath.

heat losses through furnace walls with various thicknesses of Hi-Temp No. 19

THICKNESS OF FURNACE WALL	THICKNESS OF HI-TEMP. NO. 19	UNIT LOSSES ARE IN B.T.U. PER HOUR PER SQ. FT. OF SURFACE. SURFACE TEMPERATURES ARE IN °F. AIR AT 70°F.	FURNACE TEMPERATURE °F.								
			1000	1200	1400	1600	1800	2000	2200	2400	2600
IRON WALL	None	Unit Loss	8500	12700	19100	31500					
	2"	Unit Loss Sur. Temp.	314 209	410 236	502 263	600 290					
	3"	Unit Loss Sur. Temp.	217 175	277 197	342 218	412 240					
4½" FIRE BRICK	None	Unit Loss Sur. Temp.	962 371	1250 424	1507 465	1810 510	2130 548	2470 586			
	2½"	Unit Loss Hot Sur. Hi-Temp. Sur. Temp	213 870 174	262 1040 192	324 1210 212	392 1380 233	464 1550 253	541 1720 275			
	4½"	Unit Loss Hot Sur. Hi-Temp. Sur. Temp.	133 920 142	169 1100 157	207 1282 172	248 1463 187	292 1645 202	338 1825 217			
9" FIRE BRICK	None	Unit Loss Sur. Temp.	524 270	661 306	806 340	959 371	1120 400	1291 430	1470 459	1657 488	
	2½"	Unit Loss Hot Sur. Hi-Temp. Sur. Temp.	184 776 163	232 925 181	283 1074 198	337 1223 216	395 1372 234	455 1521 252	519 1670 279	585 1820 287	
	4½"	Unit Loss Hot Sur. Hi-Temp. Sur. Temp.	121 850 135	152 1017 149	186 1183 163	222 1350 176	261 1516 190	301 1683 204	344 1850 218		
13½" FIRE BRICK	None	Unit Loss Sur. Temp.	367 225	462 252	563 280	669 306	780 333	897 359	1020 383	1149 405	1283 430
	2½"	Unit Loss Hot Sur. Hi-Temp. Sur. Temp.	161 702 154	203 835 170	247 968 186	294 1100 202	343 1234 218	395 1367 234	450 1500 250	507 1633 266	567 1765 281
	4½"	Unit Loss Hot Sur. Hi-Temp. Sur. Temp.	110 796 132	139 951 145	170 1106 157	202 1260 170	237 1415 183	273 1570 195	311 1725 207	351 1880 221	

Carey COLD WATER INSULATION



Carey Impervo for ice water pipes (anti-sweat)

For use on ice water and cold water pipes to keep water cold and prevent sweating.

Double layer construction should always be used with joints and seams staggered. It is important to keep air away from the pipes.

Carey Impervo Covering is composed of insulating felt with waterproof felt liners and vapor seal jackets applied to each layer. Furnished in sections 3 ft. long, cloth covered, with bands for applying for all pipe sizes. Regularly made in double 1/2 in. and double 3/4 in. thicknesses. Other thicknesses to order.

The table shows the proper thickness to prevent sweating for various differences of temperature between air and water in the pipe and for various degrees of humidity.

TEMP. DIFF. ° F. WATER TO AIR

HUMIDITY	50° F. MAX., IN.	60° F. MAX., IN.	70° F. MAX., IN.
Up to 70%	1	1	1½
70% to 80%	1½	2	2
80% to 85%	2	2½	3

Carey Perfecto Wool Felt for cold or hot water pipes

To provide inexpensive insulation for cold water pipes—gives fair results in preventing sweating or freezing.

Carey Perfecto pipe covering consists of laminations of insulating felt with an All Service liner suitable for hot or cold pipes.

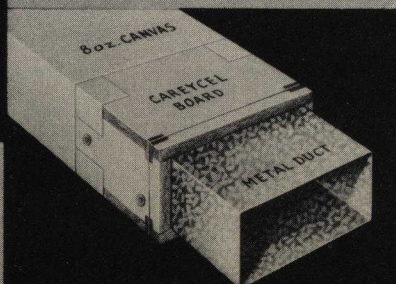
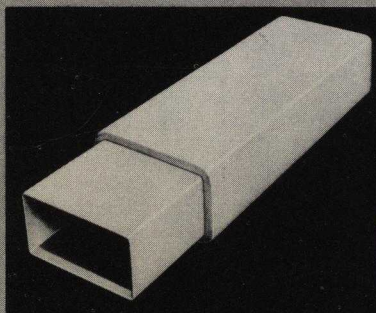
Furnished in 36-in. long sections, with cotton duck jackets and bands, in 1/2, 3/4, 1 in. double 1/2 in. and double 3/4 in. thicknesses.

Carey Protecto (Anti-freeze)

To reduce the danger of freezing of exposed water pipes.

Carey Protecto pipe covering consists of inner layers of hair felt with a waterproof felt liner and an outer structure of insulating felt. The total thickness is approximately 1¼ in. For severe conditions two-inch thickness should be used. Furnished in 36 in. long sections, with cotton duck jackets and bands.

Carey air conditioning ducts and equipment . . .



Careyduct for conveying conditioned air

For efficient conveyance of conditioned air, it comprises both duct and insulation which are erected in a single operation.

Made of asbestos; fireproof; permanent; a natural sound deadener; no noise in erection; lightweight; clean appearance; easy to erect; low cost as compared to sheet metal plus insulation; permits higher velocities, thereby making possible smaller ducts. Ask or write for Careyduct catalog.

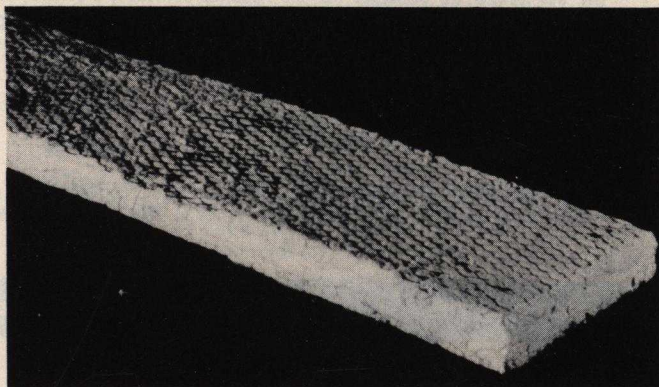
Careycel Boards to insulate metal ducts

A fireproof, low cost, high efficiency asbestos board for the insulation of metal ducts and all types of air conditioning equipment.

Composed of laminations of indented (not corrugated) asbestos felts (approximately 12 to 14 per inch of thickness). Lightweight (approximately 1½ lbs. per board foot).

Standard size sheets 36 x 36 in. or 72 in., or cut in sizes to order. Blocks 6 x 36 in. Thicknesses from 1/2 in. up.

★ MINERAL WOOL INSULATION



Mineral wool *For Industrial Ovens, Ducts, etc.*
(200° F. to 1200° F.) Also Used for Building Insulation

Loose fibre

Packed in paper bags—40 lbs. each. Fills approximately 17 sq. ft. 4 in. thick.
Packed in burlap bags—50 lbs. each. Fills approximately 22 sq. ft. 4 in. thick.

Granulated (Nodulated or Pellet)

Packed in paper bags—40 lbs. each. Fills approximately 17 sq. ft. 4 in. thick.
Packed in burlap bags—50 lbs. each. Fills approximately 22 sq. ft. 4 in. thick.

Insulating blankets

Use ½ in. thickness for each 100° F. Standard sizes—24" wide x 48" or 96" long. Many styles of metal reinforcing available. Thermal conductivity at 100° F.—0.29, at 700° F.—0.71.

See page 19 for types of blankets and List Prices.

★ DIATOMACEOUS EARTH

Dicalite fine insulating powder

The finest grade of diatomaceous earth. In loose form, it weighs from 8 to 8½ lbs. per cu. ft.; poured without tamping, its weight is from 10 to 12 lbs. per cu. ft., and can be tamped to a density of from 15 to 17 lbs. per cu. ft. It is suitable for temperatures up to 1600° F. Thermal conductivity at 500° F.—0.56; at 1500° F.—1.23.

Dicalite coarse insulating powder

A granular form of diatomaceous earth mixed with fine powder, suitable for temperatures up to 1600° F. Generally used as a dry insulating filler in walls, partitions, etc. Untamped, it weighs from 15 to 16 lbs. per cu. ft., but can be packed to a density of from 18 to 20 lbs. per cu. ft. Thermal conductivity at 500° F.—0.69; at 1500° F.—1.13.

Dicalite calcined aggregate

A semi-refractory insulating material calcined to a temperature enabling it to withstand up to 2200° F. In size, it grades from 4-mesh down to 200-mesh. It weighs approximately 28 lbs. per cu. ft. untamped and 30 to 33 lbs. per cu. ft. when tamped. It is recommended for making insulating concrete by mixing four parts of the aggregate and one part of Portland cement, by volume (30 lbs. of the aggregate to 26 lbs. of Portland cement, by weight), with sufficient water to form a plastic, well-knit mass. Thermal conductivity at 500° F.—0.865; at 1500° F.—1.555.

RECOMMENDATION—Use ¼ in. thick fill for each 100° F. of internal temperature.

Carey INSULATING AND BONDING CEMENTS

Carey insulating cements . . .

85% MAGNESIA 85% Magnesia Cement is a highly efficient insulating cement. Covering capacity approximately 55 to 60 sq. ft., 1 in. thick per cwt. Good for temperatures up to 600° F. Use for pointing up and filling cracks in 85% Magnesia molded insulation. Not recommended for hard finishing or insulating large areas.

CONDUCTIVITY 100° F.—.43, 500° F.—.61.

Supplied in 50-lb. bags.

HI-TEMP NO. 19 Hi-Temp No. 19 Cement is designed for use with Carey Hi-Temp No. 19 Blocks for sealing joints, pointing up, and filling irregular spaces. Suitable for temperatures up to 1900° F. Covering capacity approximately 50 sq. ft., 1 in. thick per cwt. Not recommended for hard finishing or insulating large areas.

CONDUCTIVITY 500° F.—.79, 1500° F.—1.12.

Furnished in 60-lb. bags.

MW-50 (MINERAL WOOL) MW-50 is an efficient insulating cement for large area monolithic construction on furnace walls, stills, tanks, boilers, etc. This cement combines maximum insulating value with toughness, reasonable hardness and excellent sticking properties. Suitable for temperatures up to 1600° F. Can be trowled reasonably smooth. For very smooth finish, trowel sur-

face with No. 303 or No. 100 hard finish cement. Dry covering capacity for MW-50 approximately 50 sq. ft., 1 in. thick per cwt.

CONDUCTIVITY 100° F.—0.69, 600° F.—0.98.

Furnished in 50-lb. bags.

NO. 707 ASBESTOS CEMENT No. 707 Asbestos Cement is a long fibre grade having excellent insulating value. Suitable for covering fittings, pointing up blocks and pipe coverings and for a finished coat over block work where exceptionally smooth finish is not required. It is reasonably hard and sticks tight. Suitable for temperatures up to 750° F. Covering capacity approximately 22 sq. ft., 1 in. thick per cwt.

CONDUCTIVITY at 100° F.—1.00, at 500° F.—1.34.

Furnished in 50 and 100-lb. bags.

NO. 303 ASBESTOS CEMENT No. 303 Asbestos Cement is a general utility cement for finishing, pointing up, fittings, etc. It is similar to but a less expensive grade than No. 707 Cement. Covering capacity 18 to 20 sq. ft., 1 in. thick per cwt.

CONDUCTIVITY 100° F.—1.4, 300° F.—1.9.

Furnished in 50 and 100-lb. bags.

TEMPCHEK CEMENT for sealing joints and pointing up Tempchek pipe covering and block work. Covering capacity approx. 50 sq. ft. 1 in. thick per cwt.

the Carey line of Finishing, Bonding, Refractory Cements

LF-20 — Finishing Cement LF-20 Asbestos Cement is a medium-hard, long fibre finish cement for final surfacing over insulation where expansion strains are severe, as in the case of insulation applied over boiler water walls. Covering capacity approximately 20 sq. ft., 1 in. thick per cwt.

Furnished in 50 and 100-lb. bags.

NO. 100 CEMENT—Hard Finish Cement No. 100 Asbestos Cement is a hard finish cement to be used as a final protective coating over block work or other insulating cement. Covering capacity approximately 20 sq. ft., 1 in. thick per cwt.

CONDUCTIVITY 100° F.—1.3.

Furnished in 50 and 100-lb. bags.

FIBROUS ADHESIVE — Bonding Carey Fibrous Adhesive is used for sticking insulating blocks to surfaces where the usual method of wiring is difficult or impractical. Fibrous Adhesive is a fibrous plastic material of thin troweling consistency. One gallon is needed to apply from 25 to 30 sq. ft. of block insulation. Suitable for temperatures up to 800° F.

Supplied in 5-gal. pails approximately (67 lbs. gross) . . . in 55-gal. barrels approximately (670 lbs. gross).

VITRICEL CEMENTS Vitricel Cement is a dry semi-refractory hydraulic setting cement. It should be used for semi-refractory surfacing of insulating blocks used in lining breechings, ducts, etc., and for covering exposed metal

parts. Resists moisture. Vitricel cement is suitable for temperatures up to 1900° F. Drying shrinkage .5%; heat shrinkage 3.5%. Covering capacity 17 sq. ft., 1 in. thick per 100 lbs.

Furnished in 50-lb. bags.

ASBESTOS FURNACE CEMENT — Refractory Bonding Asbestos Furnace Cement is a wet plastic refractory cement ready for use. Suitable for temperatures up to 1800° F. Designed for setting refractory brick and tile and for patching iron and refractories. Not designed for trowel-coating insulating materials. May be used as a brush coating in layers approximately 1/16 in. thick. For this purpose it should be thinned to a paint consistency with a dilute solution of silicate of soda and water. Linear drying shrinkage 3.5%. Heat shrinkage up to 1800° F. 5%. Covering capacity approximately 22 sq. ft., 1/2 in. thick per 100 lbs.

Furnished in 2 1/2-lb., 10-lb., 25 lb. and 50-lb. cans; also 400-lb. and 650-lb. barrels.

B. T. U. CEMENT—Air-Tight Boiler Wall Coating Carey B.T.U. cement is designed to protect boiler settings from the infiltration of cold air. Apply over the entire surface to a thickness of at least 1/16 in. with a large plasterer's trowel. Effects savings in fuel up to 10%. Covering capacity approximately 200 sq. ft., 1/16 in. thick per 100 lbs.

Furnished in 550-lb. drums, 300-lb. drums, 50-lb. pails, 10-lb. cans (4 per carton).

★ CEMENT SELECTION GUIDE

use	recommendation	use	recommendation
pointing-up	—For pointing up and filling cracks, 85% Magnesia or Hi-Temp Cements should be used with the corresponding molded insulation. These cements are not recommended for hard finishing or insulating large areas. For pointing up laminated or molded Asbestos Insulations, No. 303 or No. 707 Cement are recommended.	finishing	—For a smooth, reasonably hard finish over molded insulation, use No. 303 or No. LF20 Asbestos Cements. For a very hard, smooth, plaster-like finish over block insulation, particularly on large areas, where shrinkage cracks are to be avoided, No. 100 Cement is the most satisfactory.
water-proofing	—For a thin waterproofing film, Fibre Coating may be applied with a brush. For heavy waterproof trowel coating, ¼-in. wet thickness of Thermotex is the most desirable.	stack and breeching lining	—For pointing up internal stack or breeching insulation, covering metal parts and surfacing block insulation, use Vitricel Cement. Use Vitricel Cement for temperatures up to 1900 ° F.
fittings	—For small, solid Asbestos Cement Fittings, use No. 303 or No. 707 Cement to the desired thickness. For larger fittings which are first blocked in, use No. 100 Cement as a finish coat. For large fittings where solid cement insulation is required, use MW50 for roughing in and No. 100 for finishing.	boilers, tanks, stills, etc.	—For large area solid monolithic cement construction, use MW50 Cement. This cement combines maximum insulating value, reasonable hardness, a tough structure, excellent sticking properties and minimum cracking. For a very smooth, hard outer finish, use No. 100, No. 303 or No. LF20 Cement.
refractory coating and patching	—For setting up and patching refractory linings, iron furnace bowls, etc., use Asbestos Furnace Cement. This cement may also be used as a wash coat over insulation to give a hard, abrasion-resisting, refractory finish. It should not be used for trowel coating insulation. For a heavy refractory trowel coat use Vitricel Cement.	bonding	—Use Carey Fibrous Adhesive for bonding insulating blocks to metal surface or to each other where wire reinforcement is impractical or inadequate.

Carey Weatherproofing material

Wet heat insulating materials lose their heat-saving qualities. Adequate weatherproofing is absolutely essential for exposed steam pipe lines, insulated tanks, stills, and other outdoor equipment.

A few Carey Weatherproofing materials most effective and desirable for protecting heat insulations are described on this page.

CAREY THERMOTEX B A combination of asbestos fibres and emulsified asphalt forming a cold plastic waterproof cement for application by trowel in one or more coats preferably over 1" wire mesh reinforcement. Recommended for use as a waterproof coating over insulation applied on equipment exposed to the weather. It is the most fire resisting of all asphalt waterproofing coatings. It shrinks in drying to one-half the wet thickness. Covering capacity 55 sq. ft., ¼ in. wet thickness per 100 lbs. Furnished in 500-lb. drums, 275-lb. kegs and 45-lb. pails.

CAREY FIBRE COATING A combination of asbestos fibre and liquid asphalt forming a cold fibrous asphalt waterproof coating for application by brush or mop, for use as a preservative over roofing or waterproofing surfaces. Applied in two coats it makes an excellent waterproofing for hard finish asbestos cement surfaces exposed to the weather. When dry it forms a thin fibrous asphalt enamel. Covering capacity approximately 1½ gal. per 100 sq. ft. Furnished in 52-gal. barrels, 28-gal. kegs, 5-gal. pails.

CAREY ASBESTOS FELTS

FIREGUARD JACKETING Carey Fireguard Jacketing is specifically designed for weatherproofing insulated pipe lines to minimize fire hazard. It carries the Underwriters' Class "B" label. Fireguard Jacketing combines great tensile strength with light weight and flexibility. Excessive bulky and hazardous asphalt has been eliminated—Fireguard is all "working weight." It provides maximum resistance to the spread of fire when used for jacketing outdoor pipe coverings and insulated surfaces.

Fireguard Jacketing consists of one sheet of asphalt saturated asbestos felt to which is cemented a sheet of unsaturated asbestos on each side. Both exposed surfaces are white. The unsaturated asbestos surface sheets are treated to make them water repellent. Furnished in rolls 36" wide, containing 108 square feet. Weight, 38 lbs. per roll.

FIBEROCK CAP SHEET An excellent uncoated asbestos roofing for jacketing high temperature insulated pipe lines where high temperatures may cause running and dripping of a coated roofing.

Consists of 2 asphalt saturated asbestos sheets combined with asphalt. Surfaces are black. Has good flexibility to conform to small radius curvatures. Carries Underwriters' Class "C" label. Weight—40 lbs. per square.

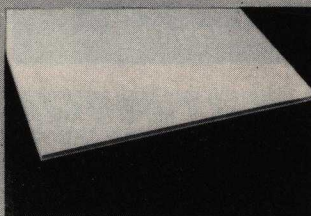
Furnished in rolls 36 in. wide containing 108 sq. ft. (one square).

FIBEROCK ASBESTOS FELT An asphalt saturated asbestos felt recommended as a factory applied jacket for underground asbestos pipe coverings. The felt weighs approx. 10 lb. per 100 sq. ft. A double wrap 2-ply construction is recommended. Is also available in 15 lb. per 100 sq. ft. weight for application in one layer on the job. Furnished in rolls of 324 sq. ft.

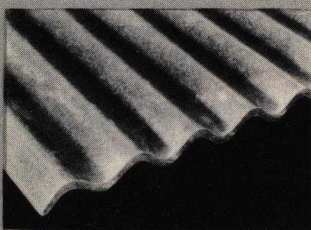
ASBESTOS GRAPEVINE FINISH FELT A saturated and coated asbestos roofing weighing 52 lbs. per 108 sq. ft. Recommended for jacketing insulation on medium and low pressure steam lines. Furnished in rolls 36 in. x 36 ft.

ROOFING JACKETED COVERINGS—For Outdoor Pipes. Prepared roofing jackets attached to pipe coverings at the factory are the least expensive form of waterproofing. Multi-Ply, Asbestos-Sponge, Careycel, Impervo and Protecto coverings can be furnished with such roofing jackets attached, including 6-in. wide collars for covering butt joints, and waterproof cement and wire for application. For outdoor exposed pipes Carey Surety roofing jacketed coverings are regularly supplied. For pipes running in closed conduits underground double layer Fiberock Asbestos Roofing jackets are recommended.

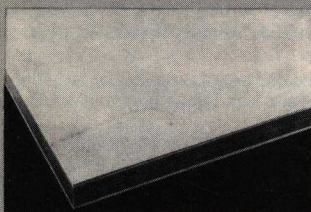
Carey SHEET AND PANEL INSULATION



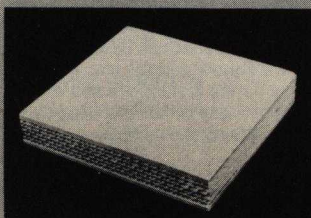
CAREYSTONE-FLAT



CAREYSTONE-CORRUGATED



THERMO-BORD



MARINE PANEL

CAREYSTONE—Flat Asbestos-Cement Sheathing for Ovens, Kilns, Driers, etc.

Careystone Flat Asbestos-Cement Sheathing is made of Portland cement and Asbestos. By a special Carey process, long, tough asbestos fibres are evenly distributed through the cement, and this rugged mixture is combined permanently under terrific pressure, and when "cured," has resiliency and strength.

Fire resisting—even the flame of a blow-torch cannot ignite it. No amount of soaking in water can harm it, it's all mineral. Never needs the protection of paint—though it can be given a paint finish. It is ideal wherever there are gases and fumes from industrial operations to contend with. Suitable for interior and exterior uses.

Sizes Available—Careystone Flat Asbestos Sheathing is made in sheets 48 x 48 in., 48 x 96 in., 48 x 120 in. and 48 x 144 in. Its weight varies in direct proportion to its thickness, the 1/4 in. thickness weighing approximately 2 1/2 lbs. per sq. ft. Made in thicknesses 1/4 in. to 2 in. inclusive.

CAREYSTONE CORRUGATED—Asbestos-Cement Sheets

Careystone Corrugated Asbestos Roofing and Siding is produced of the same composition as Careystone Flat Sheathing described above.

Careystone Corrugated Asbestos Roofing is available in 4.2 pitch of corrugations and is manufactured in sheets 42 in. wide containing 10 corrugations. Standard lengths range from 3 ft. to 12 ft. in multiples of 6 in. Average thickness is approximately 3/8 in.

The approximate per square ft. weight in bulk is 3 3/4 lbs. and the approximate crated weight is 4 1/2 lbs.

THERMO-BORD

Carey Thermo-Bord is composed of 1/2 in. Careystone Asbestos Wallboard bonded on one or both sides to fibre type Insulation Board. The thickness of the Fibreboard can be furnished to desired requirements in multiples of 1/2 in. Standard size sheets, 4 x 8 ft.

Carey Thermo-Bord is suitable for low temperature oven construction, partition work, insulated roof decks.

FIREFOIL AND MARINE PANEL For Bulkheads, Air-Conditioning Housings, Air-Cooled Boiler Walls, Industrial Oven Walls, Etc.

Carey Firefoil is composed of fine corrugated asbestos felts, firmly bonded and treated to render it a light weight, strong, rigid, fireproof, waterproof insulating board.

Marine Panel consists of Firefoil surfaced on both sides with cement-asbestos sheathing. Unexcelled for construction of air-conditioning housings, industrial oven walls, paneling for air-cooled boiler walls, large air ducts, etc.

(Approved by the U. S. Maritime Commission for Class A-1 and Class B fireproof bulkhead construction.)

Firefoil weighs approximately 2 lbs. per board foot, maximum size 48 x 120 in.; thicknesses from 1/2 in. up.

Marine Panel weighs approximately 3 1/4 to 3 1/2 lbs. per board foot; maximum size 48 x 96 in.; thicknesses from 1/2 in. up.

Firefoil is a unique insulation material that comprises characteristics of structural materials and is suitable for temperatures up to 900° F.

OTHER SHEET AND PANEL INSULATIONS

Careycel and Air Cell Insulated Sheathing are similar products using Careycel and Air Cell respectively for the core. These materials are suitable for oven construction up to about 400° F.

Mineral Wool Blankets For general industrial plant, oven and duct use. See page 7

Asbestos-Sponge For high and medium pressure steam systems. See page 3

Careycel For temperatures up to 300° F. See page 3

Excel For temperatures up to 300° F. See page 3

Air Cell For temperatures up to 300° F. See page 3

Carey MISCELLANEOUS PRODUCTS

Asbestos Paper is furnished in 50 and 100 lb. rolls 36 in. wide in weights of 6, 8, 10, 12, 14 and 16 lbs., per 100 sq. ft., also in $\frac{1}{16}$, $\frac{1}{32}$ and $\frac{1}{8}$ in. thicknesses.

Corrugated Asbestos Paper is a flexible structure consisting of a flat asbestos sheet to which is attached a corrugated asbestos sheet. It is recommended for covering hot air furnace pipes, ducts, etc., where flexible asbestos insulation is required. It is furnished with coarse corrugations approximately $\frac{1}{4}$ in. deep, fine corrugations $\frac{1}{8}$ in. deep and extra fine corrugations approximately $\frac{1}{16}$ in. deep, in rolls 37 in. wide containing 250 sq. ft. each. Weight is approximately 50 lbs. per roll.

Asbestos Millboard is furnished in standard sheets 42x48 in., in thicknesses from $\frac{1}{32}$ to $\frac{1}{2}$ in. It is furnished in two grades—No. 7 Medium or Standard Grade and No. 1, a hard grade. Shipped in approximately 100 lb. net wt. cartons.

WEIGHTS AND THICKNESS OF ASBESTOS MILLBOARD

Thickness, inches	Per Sheet 42 x 48 in., pounds	Per Sq. Ft., ounces	Thickness, inches	Per Sheet 42 x 48 in., pounds	Per Sq. Ft., ounces
$\frac{1}{32}$	2.0	2.3	$\frac{3}{16}$	10.35	11.8
$\frac{3}{64}$	2.8	3.2	$\frac{1}{4}$	14.01	16.0
$\frac{1}{16}$	3.85	4.4	$\frac{5}{16}$	17.5	20.0
$\frac{3}{64}$	4.8	5.5	$\frac{3}{8}$	20.28	23.1
$\frac{1}{8}$	5.82	6.6	$\frac{1}{2}$	26.53	30.3
$\frac{1}{16}$	6.93	7.9	$\frac{5}{8}$	34.3	39.2
$\frac{1}{4}$	9.0	10.3	$\frac{3}{4}$	39.8	45.5

Carey A-101 Asbestos Cement Boiler Expansion Joint Resilient Filler. A long fibre asbestos composition of springy construction. It is designed specifically for filling or cementing expansion spaces in boiler settings to provide an elastic, relatively gas-tight expansion joint. A-101 is packed in 50-lb. bags.

Asbestos Tank Jackets The Carey Improved Careycel Jacket represents the perfect range boiler insulation.

Heat losses with a Careycel Jacket are 30% less than with the ordinary commercial Air Cell Type of Jacket. Increased efficiency and saving at no additional cost.

Carey Improved Careycel Jackets are furnished in standard 30, 40, 52, 66, 82 and 100 gallon sizes; also special sizes. It will pay you to investigate.

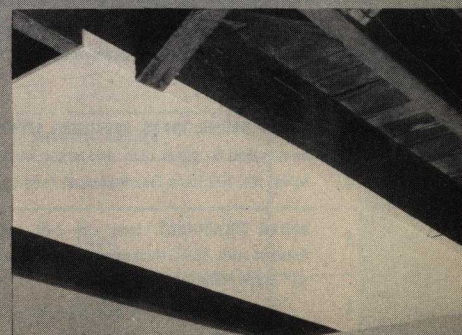
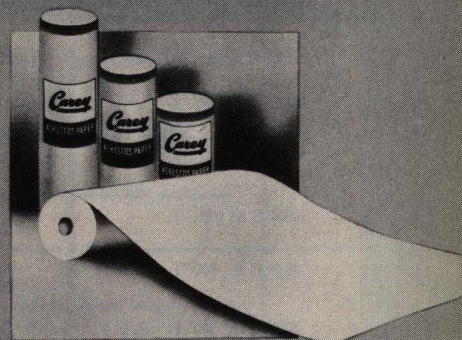
Carey A-D Board especially designed for return duct use

Carey A-D Board is a strong, tough, laminated board especially designed for use in fabricating return ducts by nailing across two joist bays. It is furnished in sheets 33 in. x 60 in. for standard joist spacing of 16 in. and has a center line for ready location of the center joist.

Carey A-D Board is finished both sides with white asbestos felt. No additional finish is required but if desired A-D Board can be readily painted with casein or cold water paints; after sizing, lead and oil can be used.

Carey A-D Board is odorless and clean and contains no asphalt or organic adhesive. There is nothing in the product to rust or deteriorate with use. It will not conduct electricity. Due to the nature of the material, it will produce far more quiet ducts than sheet metal.

Carey A-D Board can be easily cut to size and shape and can be applied quickly with nails or staples. To secure best results and a neat finished appearance, all lateral joints and exposed edges should be taped with 4-in. wide Asbestos Paper ribbon cemented in place.



HEAT INSULATION—CONDENSED SPECIFICATIONS

superheat piping insulation—thickness tables for various temperature ranges

TEMPERATURE RANGE	CAREY RECOMMENDATION	PIPE SIZES AND RECOMMENDED INSULATION THICKNESSES								
		½" to 1½"	2"	2½"	3"	3½"	4"	4½"	5 to 10"	12" & larger
1100° F. to 1200° F.	Inner Layer Tempchek Outer Layer 85% Magnesia	2" None	2½" 1½"	1½" 1½"	2½" 1½"	1½" 1½"	2½" 1½"	2½" 1½"	3" 2"	3½" 1½"
1000° F. to 1100° F.	Inner Layer Tempchek Outer Layer 85% Magnesia	2" None	2½" 1½"	1½" 1½"	2½" 1½"	1½" 1½"	2½" 2"	2½" 2"	3" 2"	3" 2"
900° F. to 1000° F.	Inner Layer Tempchek Outer Layer 85% Magnesia	2" None	1½" 1½"	1½" 1½"	1½" 1½"	1½" 1½"	2½" 1½"	1½" 1½"	2½" 2"	2½" 2"
800° F. to 900° F.	Inner Layer Tempchek Outer Layer 85% Magnesia	2" None	1½" 1½"	1½" 1½"	1½" 1½"	1½" 1½"	1½" 1½"	1½" 1½"	2" 2"	2" 2"
700° F. to 800° F.	Inner Layer Tempchek Outer Layer 85% Magnesia	2" None	1½" 1½"	1½" 1½"	1½" 1½"	1½" 1½"	1½" 1½"	1½" 1½"	1½" 2"	1½" 2½"
550° F. to 700° F.	Inner Layer Tempchek Outer Layer 85% Magnesia	2" None	1½" 1½"	1½" 1½"	1½" 1½"	1½" 1½"	1½" 1½"	1½" 1½"	1½" 1½"	1½" 2"

steam, hot water and low pressure piping insulation

450° F. to 550° F.	Carey 85% Magnesia Carey Asbestos-Sponge	½" to 3½" inc. 2" 2"	4" to 10" inc. Double Std. Thick 2½"	12" and larger 3" 3"
350° F. to 450° F. (120-415 lb. pres.)	Carey 85% Magnesia Carey Asbestos-Sponge	1½" 1½"	Double Std. Thick 2"	3" 2½"
250° F. to 350° F. (30-120 lb. pres.)	Carey 85% Magnesia Carey Asbestos-Sponge	Std. Thick 1"	1½" 1½"	2" 2"
150° F. to 250° F.	Carey 85% Magnesia Carey Careycel	Std. Thick 1"	Std. Thick 1"	1½" 1½"

cold water and miscellaneous piping insulation

Cold Water Piping (60° F. and over)	All pipe sizes—Perfecto (Wool Felt) Covering 1" thick To prevent freezing—2" thick Protecto Covering (Anti-Freeze)	
Ice Water Piping (40° F. to 55° F.)	50° F. and above—Double ½" thick Impervo (Anti-Sweat) Under 50° F.—Double ¾" thick Impervo.	
Roof Leaders, Down-Spouts, Soil and Waste Piping	All pipe sizes—Perfecto (Wool Felt) Covering 1" thick	
Brine Piping	From 15° F. to 32° F., Brine thickness Cork or 2 layers, 1" thick Hair Felt alternated with waterproof paper. From 0° F. to 15° F., Brine thickness Cork or 3 layers, 1" thick Hair Felt alternated with waterproof paper. From 30° F. to 0° F., special thickness Brine Cork or 4 layers of 1" thick Hair Felt alternated with waterproof paper.	
APPLICATION	All double layer coverings to have staggered joints, first layer being firmly wired or otherwise secured in place. External finish of covering to be standard pasted canvas jackets and metal bands on 18-in. centers. Canvas to be painted with one coat of cold water paint or sized and painted with two coats of lead and oil paint of color desired. Alternate finish may be 8 oz. canvas applied over building paper and hand sewed three stitches per inch.	

MISCELLANEOUS EQUIPMENT

FITTINGS AND FLANGES Cover with Block or Cement of same material to the same thickness as adjacent coverings (except 85% Magnesia Block to be used with Laminated Asbestos Coverings and Hair Felt to be used with Wool Felt type Coverings) smoothly finished with pasted canvas jacket.

BOILER DRUMS, TANKS, RECEIVERS, SEPARATORS, ETC. Use same materials and thicknesses as specified for pipes 12 in. and larger, carrying the same temperature or pressure, finished with ½-in. No. 100 Hard Finish Cement (additional canvas finish optional.)

BOILER BREACHINGS. Line with 2-in. thick Tempchek Blocks firmly secured in place and finished with ¾-in. thickness Carey Vitricel Cement applied in two layers and reinforced with ½" mesh metal lath.

Alternate—Insulate breachings externally with 2-in. thick Tempchek applied over mesh or netting to give ¾-in. air space and finish with ½-in. thickness Carey No. 100 Hard Finish Cement.

BOILER WATER WALLS Apply MW-50 Cement to make a smooth surface. Follow with two layers of 2-in. thick 85% Magnesia Blocks, broken joint construction. Finish with Careystone Panels or ½-in. No. 100 Hard Finish Cement.

TEMPERED AIR DUCTS AND FAN HOUSINGS Cover with 1-in. thick Careycel Blocks or Sheets followed by 16-lb. Asbestos Paper to make a smooth surface and finished with 8-oz. pasted canvas jacket and paint.

ECONOMIZER AND AIR PREHEATER DUCTS. Line with 2¼ in. thick Tempchek Blocks firmly secured. Finish with ¾-in. thick Vitricel Cement reinforced with ½" mesh metal lath.

OUTDOOR PIPES AND EQUIPMENT Waterproof pipe insulation with 45-lb. per square asphalt roofing jackets (Fireguard Jacketing where a serious fire hazard exists) held in place with 16-gauge copper wire or copper-clad wire on 6-in. centers—3-in. laps in all directions. Waterproof valves, fittings, tanks, etc., with ¼-in. thick (wet) Thermotex asphalt emulsion, applied in two layers.

★ INDUSTRIAL INSULATIONS—GENERAL SELECTION GUIDE

	SURFACE AND USES	PRODUCT	PAGE
HIGH TEMPERATURE EQUIPMENT— (1000° F. to 2500° F.)	For furnaces, ovens, kilns, lehrs, breechings, etc. Temperatures to 2500° F. or over. Block or brick form.	Hi-Temp No. 19 Carey Tempchek	4
	For insulating concrete. Temperatures to 2200° F. A calcined diatomaceous earth.	Carey Calcined Aggregate	7
	For manufacture of heat insulating brick, blocks and cements and as filler in hollow insulating walls. A diatomaceous earth in two grades, fine and coarse. Temperatures to 1600° F.	Carey Dicalite Insulating Powder	7
SUPERHEATED SURFACES— (600° F. to 1500° F.)	For superheated steam and hot oil lines, oil stills, ovens, boiler breechings, etc. Usually used in combinations with 85% Magnesia. Temperatures to 1500° F. Pipe covering, curved or flat block form.	Carey Tempchek	4
	For ovens, ducts, flues, tanks, etc., requiring large flexible sheets. Temperatures to 1300° F.	Carey Mineral Wool Blankets	7
MEDIUM AND HIGH PRESSURE STEAM SURFACES (200° F. to 600° F.)	For pipes and other steam surfaces. Temperatures 600° F. Pipe covering, flat or curved blocks.	Carey 85% Magnesia	3
	For pipes and other steam surfaces. Temperatures to 600° F. Built to withstand hard service. Pipe covering, flat or curved blocks.	Carey Asbestos Sponge	3
LOW AND MEDIUM PRESSURE STEAM SURFACES— (100° F. to 300° F.)	For pipes, boilers, ovens, etc. Temperatures to 300° F. Unusually low conductivity, resilient, negligible shrinkage. Pipe covering and blocks.	Careycel	3
	For pipes, etc. Temperatures to 300° F. Pipe covering, sheets and blocks.	Carey AirCell	3
	For pipes, etc. Temperatures to 300° F. Pipe covering, sheets and blocks.	Carey Excel	3
COLD WATER PIPES	For ice water and cold water pipes to keep water cold and prevent sweating. Pipe covering sections.	Carey Impervo	6
	For hot or cold water pipes to prevent sweating or freezing. Inexpensive. Pipe covering sections.	Carey Perfecto	6
	For exposed pipes to prevent freezing. Pipe covering sections.	Carey Protecto	6
AIR CONDITIONING DUCTS AND EQUIPMENT	Careyduct all asbestos ducts, and insulation for metal duct work, and air conditioning equipment.	Careyduct—Careycel— Firefoil	6 10

sheet and panel insulations—selection guide

TEMPERATURES UP TO	CONSTRUCTION	DIMENSION LIMITS			PRODUCT	PAGE
		WIDTH	LENGTH	THICK		
1300° F.	Felted mineral fibre—flexible	24"	48" & 96"	1"-6"	Mineral Wool Blankets	7
900° F.	6 plies corrugated asbestos, per 1". (All 36" surfaces vitrified. Each side reinforced).	48"	120"	½"-4"	Firefoil	10
700° F.	Portland cement and asbestos, compressed structural sheets—flat and corrugated.	Flat 48" Cor. 42"	96" 120"	¼"-2" ¾"	Careystone	10
500° F.	Many layers asbestos felt	36"	108"	½"-4"	Asbestos Sponge	3
300° F.	Many layers asbestos felt	36"	108"	½"-4"	Careycel	3
300° F.	6 plies corrugated asbestos per 1"	36"	108"	½"-4"	Excel	3
300° F.	4 plies corrugated asbestos per 1"	36"	108"	½"-4"	Air Cell	3

TEMPCHEK COMBINATION PIPE COVERING...

PIPE SIZE	1½ INCH NOMINAL THICKNESS			2 INCHES NOMINAL THICKNESS			2½ INCHES NOMINAL THICKNESS (SINGLE LAYER)			3 INCHES NOMINAL THICKNESS (DOUBLE LAYER)		
INCHES	ACTUAL THICKNESS	LIST PRICE	OUTER LAYER PIPE SIZE	ACTUAL THICKNESS	LIST PRICE	OUTER LAYER PIPE SIZE	ACTUAL THICKNESS	LIST PRICE	OUTER LAYER PIPE SIZE	ACTUAL THICKNESS	LIST PRICE	OUTER LAYER PIPE SIZE
½	1½ *C	\$0.46	3	2 *C	\$0.75	4½	....	....	....	....	....	....
¾	1½ *C	.49	3½	2 *C	.80	4½	....	....	....	....	....	....
1	1½ *C	.52	4	2 *C	.85	5	....	....	....	....	....	....
1¼	1½ *C	.56	4	2 *C	.90	5	....	....	....	....	....	....
1½	1½ *C	.60	4½	2 *C	.95	6	....	....	....	....	....	....
2	1¼ *D	.64	4½	2¼ *D	1.00	6	....	....	....	....	....	....
2½	1¼ *D	.70	5	1¾ *D	1.05	6	....	....	....	....	....	....
3	1¼ *D	.76	6	2¼ *D	1.15	7	2¾ *D	\$1.50	8	....	....	....
3½	1¼ *D	.82	6	1¾ *D	1.25	7	2¾ *D	1.65	8	....	....	....
4	1¼ *D	.88	7	2¼ *D	1.35	8	2½ *D	1.80	9	....	....	....
4½	1¼ *D	.94	7	1¾ *D	1.45	8	2½ *D	1.95	9	....	....	....
5	1½ *D	1.00	8	2 *D	1.55	9	2½ *D	2.10	10	3 *D	\$2.50	11
6	1½ *D	1.10	9	2¼ *D	1.70	10	2½ *D	2.25	11	3 *D	2.70	12
7	1½ *D	1.20	10	2 *D	1.85	11	2½ *D	2.40	12	3 *D	2.90	14
8	1½ *D	1.35	11	2 *D	2.00	12	2½ *D	2.55	14	3 *D	3.15	15
9	1½ *D	1.50	12	2¼ *D	2.20	14	2½ *D	2.80	15	3 *E	3.40	16
10	1¼ *D	1.65	14	2¼ *D	2.40	15	2½ *D	3.05	16	3 *E	3.65	17
12	1¼ *E	1.85	16	2¼ *E	2.70	17	2½ *E	3.40	18	3 *E	4.10	19
14	1½ *E	2.10	17	2 *E	3.00	18	2½ *E	3.80	19	3 *E	4.60	20
16	1½ *E	2.35	19	2 *E	3.30	20	2½ *E	4.20	21	3 *E	5.10	22
18	1½ *E	2.60	21	2 *E	3.60	22	2½ *E	4.60	23	3 *E	5.60	24
20	1½ *E	2.85	23	2 *E	4.00	24	2½ *E	5.00	26	3 *E	6.00	26
24	1½ *E	3.30	27	2 *E	4.50	28	2½ *E	5.75	30	3 *E	7.00	30
30	1½ *E	4.00	33	2 *E	5.50	**	2½ *E	6.95	**	3 *E	8.40	**
33	1½ *E	4.40	**	2 *E	6.05	**	2½ *E	7.60	**	3 *E	9.20	**

No outer layers included in price.

CAREY TEMPCHek PIPE COVERINGS are regularly furnished in thicknesses shown in above table. Special thicknesses are made to order. Sizes ½ in. to 1½ in. inclusive should be used without any outerlayer, and are then supplied with canvas

jacket and bands for applying. All larger pipe sizes are intended to be used as inner layers only in combination with other outer layer coverings, and no canvas or bands are supplied except on special order.

applying only

to Tempchek

- * Sections (semi-cylindrical) 36 in. long.
- † Segments (curved blocks) 36 in. long by approx. 6 in. wide.
- ‡ Sections or segments.
- * 1st layer sections or segments, 2nd layer segments.
- # 1st layer sections, 2nd layer sections or segments.

- C Furnished with canvas and bands.
- D No canvas or bands, but will be furnished without extra charge if ordered.
- E No canvas or bands, which are charged additionally if ordered.

List Prices for Sheets and Blocks

ALL TYPES

THICKNESS, INCHES	PRICE PER SQUARE FOOT	THICKNESS, INCHES	PRICE PER SQUARE FOOT	THICKNESS, INCHES	PRICE PER SQUARE FOOT	THICKNESS, INCHES	PRICE PER SQUARE FOOT
¾	\$0.27	1½	\$0.45	2¼	\$0.64	2¾	\$0.83
¾	.27	1¾	.49	2¼	.68	2¾	.87
1	.30	1¾	.53	2¾	.72	3	.90
1¼	.34	1¾	.57	2½	.75	3¼	.98
1¼	.38	2	.60	2¾	.79	3½	1.05
1¾	.42	.....	.....	.....	.....	.....	.....

PIPE COVERING LIST PRICES

NOMINAL PIPE SIZES	STANDARD THICKNESS	1½ INCH THICKNESS	2 INCH THICKNESS	DOUBLE STANDARD THICKNESS	2½ INCH THICKNESS	3 INCH THICKNESS (DOUBLE LAYER)	STANDARD THICKNESS 85% MAGNESIA COVERING	DOUBLE STANDARD THICKNESSES 85% MAGNESIA COVERING	
	PRICE PER LINEAR FOOT	PRICE PER LINEAR FOOT	PRICE PER LINEAR FOOT	PRICE PER LINEAR FOOT	PRICE PER LINEAR FOOT	PRICE PER LINEAR FOOT		INNER LAYER	OUTER LAYER
Inches							Inches	Inches	Inches
½	\$0.22 *C	\$0.46 *C	\$0.75 *C	\$0.65 *C	\$1.00 *C	\$1.20 *C	¾	¾	1½
¾	.24 *C	.49 *C	.80 *C	.70 *C	1.05 *C	1.35 *C	¾	¾	1½
1	.27 *C	.52 *C	.85 *C	.75 *C	1.10 *C	1.40 *C	¾	¾	1½
1¼	.30 *C	.56 *C	.90 *C	.80 *C	1.15 *C	1.45 *C	¾	¾	1½
1½	.33 *C	.60 *C	.95 *C	.85 *C	1.20 *C	1.55 *C	¾	¾	1½
2	.36 *C	.64 *C	1.00 *C	.90 *C	1.25 *C	1.65 *C	1½	1½	1½
2½	.40 *C	.70 *C	1.05 *C	1.00 *C	1.35 *C	1.75 *C	1½	1½	1½
3	.45 *C	.76 *C	1.15 *C	1.10 *C	1.50 *C	1.90 *C	1½	1½	1½
3½	.50 *C	.82 *C	1.25 *C	1.20 *C	1.65 *C	2.05 *C	1½	1½	1½
4	.60 *C	.88 *C	1.35 *C	1.40 *C	1.80 *C	2.20 *C	1½	1½	1½
4½	.65 *C	.94 *C	1.45 *C	1.50 *C	1.95 *C	2.35 *C	1½	1½	1½
5	.70 *C	1.00 *C	1.55 *C	1.60 *C	2.10 *C	2.50 *C	1½	1½	1½
6	.80 *C	1.10 *C	1.70 *C	1.80 *C	2.25 *C	2.70 *C	1½	1½	1½
7	1.00 *C	1.20 *C	1.85 *C	2.25 *C	2.40 *C	2.90 *C	1½	1½	1½
8	1.10 *C	1.35 *C	2.00 *C	2.50 *C	2.55 *C	3.15 *C	1½	1½	1½
9	1.20 *C	1.50 *C	2.20 *C	2.70 *E	2.80 *C	3.40 *E	1½	1½	1½
10	1.30 *C	1.65 †C	2.40 †C	2.90 *E	3.05 †C	3.65 *E	1½	1½	1½
11	1.75 †C	1.75 †C	2.55 †C	3.50 *E	3.20 †C	3.90 *E	1½	1½	1½
12	1.85 †E	1.85 †E	2.70 †E	4.10 *E	3.40 †E	4.10 *E	1½	1½	1½
14	2.10 †E	2.10 †E	3.00 †E	4.60 †E	3.80 †E	4.60 †E	1½	1½	1½
15	2.25 †E	2.25 †E	3.15 †E	4.85 †E	4.00 †E	4.85 †E	1½	1½	1½
16	2.35 †E	2.35 †E	3.30 †E	5.10 †E	4.20 †E	5.10 †E	1½	1½	1½
17	2.50 †E	2.50 †E	3.45 †E	5.35 †E	4.40 †E	5.35 †E	1½	1½	1½
18	2.60 †E	2.60 †E	3.60 †E	5.60 †E	4.60 †E	5.60 †E	1½	1½	1½
19	2.75 †E	2.75 †E	3.80 †E	5.80 †E	4.80 †E	5.80 †E	1½	1½	1½
20	2.85 †E	2.85 †E	4.00 †E	6.00 †E	5.00 †E	6.00 †E	1½	1½	1½
21	3.00 †E	3.00 †E	4.15 †E	6.25 †E	5.20 †E	6.25 †E	1½	1½	1½
22	3.10 †E	3.10 †E	4.30 †E	6.50 †E	5.40 †E	6.50 †E	1½	1½	1½
23	3.20 †E	3.20 †E	4.40 †E	6.75 †E	5.60 †E	6.75 †E	1½	1½	1½
24	3.30 †E	3.30 †E	4.50 †E	7.00 †E	5.75 †E	7.00 †E	1½	1½	1½
26	3.55 †E	3.55 †E	4.85 †E	7.50 †E	6.20 †E	7.50 †E	1½	1½	1½
27	3.65 †E	3.65 †E	5.05 †E	7.70 †E	6.40 †E	7.70 †E	1½	1½	1½
28	3.75 †E	3.75 †E	5.15 †E	7.95 †E	6.65 †E	7.95 †E	1½	1½	1½
30	4.00 †E	4.00 †E	5.50 †E	8.40 †E	6.95 †E	8.40 †E	1½	1½	1½
32	4.30 †E	4.30 †E	5.90 †E	9.10 †E	7.40 †E	9.10 †E	1½	1½	1½
33	4.40 †E	4.40 †E	6.05 †E	9.20 †E	7.60 †E	9.20 †E	1½	1½	1½

THE LIST PRICES ABOVE apply to all Carey pipe coverings of corresponding thickness, except that Standard list prices apply to all pipe coverings of 1 in. or less thickness.

Note: All pipe coverings, blocks and sheets while quoted in

terms of above List Prices less discount are actually priced at net unit prices appearing in "Manual of Unit Prices" published by the magazine "Asbestos," which are essentially the same as list prices less quoted discount.

applying only

to 85% Magnesia

- * Sections (semi-cylindrical) 36 in. long.
- † Segments (curved blocks) 36 in. long by approx. 6 in. wide.
- ‡ Sections or segments.
- 1st layer sections, 2nd layer segments.
- ♦ 1st layer sections or segments, 2nd layer segments.
- # 1st layer sections, 2nd layer sections or segments.

For pipe sizes over 33 in. locomotive lagging blocks must be used and prices figured on a square foot basis.

C Furnished with canvas and bands.

D No canvas or bands, but will be furnished without extra charge if ordered.

E No canvas or bands, which are charged additionally if ordered.

APPLYING TO ALL LAMINATED ASBESTOS

& FELT PIPE COVERINGS

All laminated asbestos and felt pipe coverings are furnished in split cylindrical or semi-cylindrical sections complete with canvas and bands.

PIPE COVERING WEIGHTS PACKAGING DATA

in pounds per three-foot section (net weight)

KIND OF COVERING	THICKNESS INCHES	PIPE SIZE, INCHES																	
		½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
85% Magnesia	Std.	1.5	1.7	1.9	2.3	2.4	3.5	4.0	4.6	5.1	6.3	6.8	7.5	8.6	11.0	12.2	13.4	14.8	21.1
85% Magnesia	1½	3.2	3.1	4.5	4.7	5.2	5.7	6.4	7.3	8.1	8.8	9.5	10.4	11.9	13.4	14.8	16.3	17.9	21.1
85% Magnesia	2	5.9	6.1	6.4	7.0	7.6	8.6	9.6	10.8	11.8	13.0	13.7	15.1	16.9	18.8	20.8	23.6	25.0	29.1
85% Magnesia	Dbl. Std.	5.9	5.8	7.3	7.0	8.3	9.9	11.0	12.1	15.2	14.5	15.5	19.0	21.5	25.4	27.8	33.6	36.6	46.6
85% Magnesia	Dbl. 1½	11.9	11.8	13.5	13.2	14.9	16.7	16.0	19.8	18.8	22.8	21.6	25.6	28.4	32.1	34.6	38.3	40.7	46.6
Careycel	1	2.1	2.3	2.4	2.8	3.1	3.5	4.0	4.2	4.6	5.3	5.7	6.2	7.2	7.9	8.5	10.8	11.5	12.7
Carocel	1	2.5	3.0	3.5	3.7	4.0	4.9	5.4	6.3	7.0	8.0	8.9	9.7	11.2	12.2	13.2	15.7	17.8	21.0
Carocel	¾	2.0	2.2	2.5	2.7	3.1	3.5	3.7	4.5	5.1	5.7	6.3	7.0	8.0	8.8	9.5	11.3	12.8	14.1
Carocel	½	1.4	1.5	1.7	1.9	2.1	2.4	2.6	3.0	3.4	3.9	4.3	4.6	5.3	5.8	6.3	7.4	8.4	9.8
Asbestos Sponge	1	3.6	4.3	5.2	6.0	7.0	7.5	8.0	9.2	10.2	11.3	12.0	13.6	15.0	15.7	19.0	19.7	23.8	27.8
Air Cell	1	1.6	1.7	1.8	1.9	2.0	2.4	2.7	3.0	3.3	3.8	4.2	4.9	5.3	6.1	6.9	8.2	8.0	9.6
Air Cell	¾	1.2	1.2	1.3	1.4	1.6	1.9	2.2	2.5	2.7	3.3	3.4	3.8	4.3	4.8	5.4	6.1	6.6	8.0
Air Cell	½	0.9	1.0	1.1	1.2	1.3	1.5	1.6	1.9	2.2	2.3	2.5	2.7	3.0	3.3	3.8	4.2	4.7	5.6
Impervo	¾	2.1	2.2	2.5	3.0	3.2	3.7	4.1	4.7	5.2	5.7	6.2	6.8	7.8	8.9	10.0	11.0	12.0	14.1
Impervo	½	1.3	1.4	1.6	1.9	2.2	2.5	2.9	3.2	3.6	4.0	4.3	4.8	5.7	6.3	7.1	7.9	8.7	10.2
Impervo	Dbl. ¾	5.1	5.5	6.0	6.7	7.2	8.1	9.0	10.2	11.0	12.2	13.2	14.3	16.4	18.3	20.2	22.4	24.5	28.9
Impervo	Dbl. ½	3.2	3.4	3.8	4.3	4.6	5.2	5.8	6.7	7.4	8.1	8.9	9.8	11.2	12.7	14.0	15.8	17.5	19.7
Perfecto	1	2.7	2.8	3.1	3.6	3.8	4.4	4.9	5.6	6.3	6.9	7.5	8.2	9.5	10.7	12.0	13.5	14.8	16.9
Perfecto	¾	1.9	2.0	2.3	2.7	2.9	3.4	3.8	4.3	4.7	5.2	5.6	6.2	7.2	8.2	9.2	10.1	11.0	13.0
Perfecto	½	1.2	1.3	1.5	1.7	1.9	2.2	2.5	2.9	3.2	3.5	3.8	4.3	5.1	5.6	6.4	7.0	7.8	9.1
Perfecto	Dbl. ¾	4.6	5.0	5.4	6.0	6.5	7.3	8.2	9.3	10.0	11.1	12.1	13.1	15.1	16.8	18.5	20.6	22.6	26.0
Perfecto	Dbl. ½	2.8	3.0	3.3	3.8	4.1	4.6	5.1	5.9	6.6	7.2	7.9	8.7	10.0	11.2	12.5	14.1	15.6	17.5
Protecto	1	1.2	1.3	1.7	2.3	2.4	2.6	3.3	3.6	4.1	4.7	5.1	5.6	6.1	6.7	7.8	8.8	9.6	11.5
Defendex	1	3.0	3.2	3.4	3.7	4.4	5.1	5.8	6.5	6.9	7.2	7.6	8.0	9.4	10.8	12.2	13.6	15.0	18.0

THE WEIGHTS GIVEN IN THE TABLES ABOVE are subject to some variation, but represent averages from which fairly accurate estimates can be made. These weights are not guaranteed.
Tempchek pipe covering weights—Use 85% Magnesia weights plus 60%.

Carton data—Asbestos blocks and sheets

material

	36" CARTON		48" CARTON	
	SQUARE FEET CARTON	GROSS WEIGHT POUNDS	SQUARE FEET CARTON	GROSS WEIGHT POUNDS
2 PLY AIR CELL	108	56	144	73
3 PLY AIR CELL	72	56	96	73
4 PLY AIR CELL	54	56	72	73
1" THICK EXCEL	54	81	72	107
1" THICK CAROCEL	54	97	72	129
1" THICK ASBESTOS-SPONGE	54	124	72	165
1" THICK CAREYCEL	54	72	72	96
1" THICK PANELBOARD	54	143	72	190

INSIDE DIMENSIONS

36¼ x 6¼ x 36¼ inches
36¼ x 6¼ x 48¼ inches

cartons

Other lengths of blocks and sheets up to 96" x 36" are packaged by telescoping two cartons together. Blocks and sheets over 96" in length or 36" width are packaged in special slatted crates.

36 ft. Car Holds 400—36" Ctns. 296—48" Ctns.
40 x 8 ft. Car Holds 475—36" Ctns. 328—48" Ctns.
40 x 10 ft. Car Holds 585—36" Ctns. 405—48" Ctns.

ASBESTOS PAPER WEIGHTS PACKAGING DATA

Asbestos Paper weights and measurements

WEIGHT PER 100 SQUARE FEET	ONE POUND WILL COVER	WEIGHT OF ONE SQUARE FOOT	THEORETICAL GAUGE 65 LBS. PER CU. FT.	AVERAGE ACTUAL GAUGE	FRACTIONAL THICKNESS	SQUARE FEET PER 100 POUNDS
POUNDS	SQUARE FEET	POUND	INCHES	INCHES		
6	16.66	.06	.0109	.015	..	1666
7	14.28	.07	.0127	.017	..	1428
8	12.50	.08	.0145	.019	1/64	1250
9	11.11	.09	.0163	.021	..	1111
10	10.00	.10	.0181	.022	..	1000
12	8.33	.12	.0218	.027	..	833
14	7.14	.14	.0254	.029	..	714
16	6.25	.16	.0290	.032	1/32	623
20	5.00	.20	.0363	.039	..	500
24	4.16	.24	.0435	.046	3/64	416
32	3.12	.32	.0581	.060	1/16	312
48	2.08	.48	.0872	.089	3/32	208
64	1.56	.64	.1162	.125	1/8	156

Asbestos and Felt Pipe coverings

Most types of asbestos and felt coverings of different thicknesses are packed in corrugated cartons (See table below.)

For Export Shipments or where the order specifies crates, a standard crate having inside dimensions of 24 $\frac{3}{4}$ x 37 x 36 inches, and weighing approximately 70 pounds is used wherever possible. Sections are nested in order to obtain maximum crate weight and, where necessary, special size crates may be constructed.

APPROXIMATE NUMBER OF STANDARD

CRATES PER CAR ARE AS FOLLOWS:

36 ft. Car—	77 Crates
40 x 8 ft. Car—	96 Crates
40 x 10 ft. Car—	125 Crates
50 ft. Car—	153 Crates

Low Pressure pipe covering carton package

PIPE SIZE INCHES	1/2" THICK SECTIONS	3/4" THICK SECTIONS	1" THICK SECTIONS	
1/2	60	42	30	*15
3/4	55	35	28	*12
1	45	30	23	*12
1 1/4	28	24	18	* 9
1 1/2	24	20	15	* 8
2	20	15	12	* 6
2 1/2	15	12	11	* 5
3	12	9	8	
3 1/2	9	8	6	
4	7**	6	6	
5	6	5	4	
6	4	4	4	
8	..	3	2	
10	..	3	2	
12	..	2	2	

*1/2" THROUGH 2 1/2" pipe sizes of Defendex and Asbestos-Sponge packaged in 10" x 14" x 36 1/4" carton.

**ONLY 6 SECTIONS per carton for Perfecto.

Cartons measure approximately 13 1/2 x 19 1/4 x 36 1/4 inches outside.

Cartons weigh approximately 4 lbs.

36 ft. Car Holds	370 Ctns.
40 x 8 ft. Car Holds	450 Ctns.
40 x 10 ft. Car Holds	550 Ctns.
50 ft. Car Holds	670 Ctns.

ALL ASBESTOS AND FELT COVERINGS up to and including 12" pipe size packaged in cartons unless otherwise specified.

85% MAGNESIA PRODUCTS

PACKAGING DATA FOR 85% MAGNESIA

85% Magnesia and Hi-Temp pipe coverings

FOLLOWING TABLE SHOWS the number of lineal feet of 85 per cent Magnesia or Hi-Temp pipe coverings which can be packed in standard crates.

The standard crate has outside dimensions of 33x37x37½ in. and weighs approximately 50 lbs.

PIPE SIZES, INCHES																	
THICKNESS	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10
Standard.....	489	414	348	282	240	162	138	105	90	72	72	48	36	27	24	18	15
1½".....	240	240	162	162	138	105	90	72	60	48	45	42	30	27	21	15	15
2".....	138	138	105	105	90	72	63	48	45	42	39	30	27	21	18	15	12
Dbl. Standard...	138	138	105	105	90	72	60	48	36	36	27	27	24	18	15	12	12
Dbl. 1½".....	60	60	48	48	45	42	36	30	27	27	24	21	18	15	12	12	12

36-ft. car holds 66 carload crates; 40-ft. car 120 carload crates; 50-ft. car 147 carload crates.

85% MAGNESIA AND HI-TEMP BLOCKS

SIZE BLOCK, INCHES	SQ. FT. PER CASE	NO. PCS.
1 x6x36	144	96
1¼x6x36	114	76
1½x6x36	96	64
1¾x6x36	84	56
2 x6x36	72	48
2½x6x36*	60	40
3 x6x36	48	32

CASES

Inside dimensions 24½x24½x36½ in.
Outside dimensions 25½x25½x39¼ in.
Weight 50 lbs.

Gross weight per case, Magnesia Blocks—240 lbs.

Gross weight per case, Hi-Temp Blocks—385 lbs. 36-ft. car holds 120 cases blocks.

*Special case 25½x27x39¼ in.; weight, 50 lbs.

Carton packing data 85% Magnesia products

85% MAGNESIA PIPE COVERING (number of sections per carton)

PIPE SIZE, INCHES	STANDARD	1½ INCHES	2 INCH	2½ INCHES	DOUBLE STANDARD	DOUBLE 1½ INCHES	STANDARD COPPER TUBING
¾	36	30	20	13	..	..	36
½	36	30	16	11	16	8	36
¾	30	30	16	10	16	8	30
1	25	20	13	9	13	6	30
1¼	20	20	13	9	13	6	25
1½	30	16	11	8	10	5	20
2	20	13	9	6	9	5	20
2½	16	11	9	6	7	..	16
3	13	9	6	5	6	..	13
3½	10	8	5	5	..	..	10
4	9	6	5	4	..	..	9
4½	7	5	5	..	..	..	..
5	6	5	4	..	..	..	6
6	5	4	..	..	..	..	5

21¼x21¼x37 in. used for all sizes and thicknesses except Standard thick ¾ in. to 1¼ in. pipe size and copper tubing size ¾ in. to 1½ in., which are packed in cartons 13¾x20¼ x 37 in.

CARTON SIZE

Cartons 21¼x21¼x37 in., weight (empty)—7 lbs.

13¾x20¼x37 in., weight (empty)—5 lbs.

packing procedure

for segmental blocks

Standard packaging in cartons (Weight empty approx. 3 lbs. each)

85% MAGNESIA BLOCKS (number of sq. ft. per carton)

BLOCK THICKNESS, INCHES	SQ. FT. PER CARTON	APPROXIMATE WEIGHTS, LBS. GROSS	NET
1	36	52	49
1¼	*30	54	51
1½	24	53	50
1¾	21	53	50
2	18	52	49
2¼	15	51	48
2½	*15	54	51
3	12	52	49

SIZE OF CARTON (outside dimension): 12¾x12¾x37 in.

Weight, 3 lbs.,

*Special carton: 12¾x13½x37 in.

SIZE, INCHES	NUMBER OF BLOCKS PER SECTION, ALL THICKNESSES	NUMBER OF BLOCKS PER CARTON			
		1½ IN. THICK	2 IN. THICK	3 IN. THICK	3½ IN. THICK
12	8	16	12	8	6
14	9	16	12	8	6
16	10	16	12	8	6
18	11	16	12	8	6
20	12	16	12	8	6
22	13	16	12	8	6
24	15	16	12	8	5
26	16	16	12	8	6
28	17	16	12	8	6
30	18	16	12	8	6

PIPE DIMENSIONS

MINERAL WOOL BLANKETS

Standard dimensions; wrought iron and steel—steam, gas and water pipe

DIAMETER			NOMINAL THICKNESS	CIRCUMFERENCE		TRANSVERSE AREA			LENGTH PIPE PER SQUARE FOOT		LENGTH OF PIPE CONTAINING 1 cu. foot	NOMINAL WEIGHT PER FOOT
Nominal internal	Actual external	Actual internal		External	Internal	External	Internal	Metal	External surface	Internal surface		
INCHES	INCHES	INCHES	INCHES	INCHES	INCHES	SQ. INCHES	SQ. INCHES	SQ. INCHES	FEET	FEET	FEET	POUNDS
1/8	.405	.269	.068	1.272	.845	.129	.057	.0717	9.431	14.199	2533.	.244
1/4	.54	.364	.088	1.696	1.144	.229	.104	.1249	7.075	10.49	1383.3	.42
3/8	.675	.493	.091	2.121	1.549	.358	.191	.167	5.657	7.747	754.3	.567
1/2	.84	.622	.109	2.639	1.954	.554	.304	.250	4.547	6.141	473.9	.850
3/4	1.05	.824	.113	3.299	2.589	.966	.533	.3327	3.637	4.635	270.	1.115
1	1.315	1.049	.133	4.131	3.296	1.358	.864	.494	2.904	3.641	166.6	1.678
1 1/4	1.66	1.38	.14	5.215	4.333	2.164	1.496	.668	2.301	2.768	96.25	2.244
1 1/2	1.9	1.610	.145	5.969	5.058	2.835	2.036	.799	2.01	2.372	70.73	2.717
2	2.375	2.067	.154	7.461	6.494	4.43	3.356	1.074	1.608	1.848	42.91	3.609
2 1/2	2.875	2.469	.203	9.032	7.757	6.492	4.788	1.704	1.328	1.547	30.07	5.793
3	3.5	3.068	.216	10.996	9.638	9.621	7.393	2.228	1.091	1.245	19.47	7.575
3 1/2	4.0	3.548	.226	12.566	11.146	12.566	9.887	2.679	.955	1.077	14.57	9.001
4	4.5	4.026	.237	14.137	12.648	15.904	12.73	3.174	.849	.949	11.31	10.665
4 1/2	5.0	4.506	.247	15.708	14.156	19.635	15.947	3.688	.763	.847	9.03	12.538
5	5.563	5.047	.258	17.477	15.856	24.306	20.006	4.300	.686	.756	7.198	14.671
6	6.625	6.065	.28	20.813	19.054	34.472	28.888	5.584	.577	.63	4.98	18.762
7	7.625	7.023	.301	23.955	22.063	45.664	38.738	6.926	.501	.544	3.72	23.271
8	8.625	7.981	.322	27.096	25.073	58.426	50.027	8.399	.442	.478	2.878	28.544
9	9.625	8.941	.342	30.238	28.089	72.76	62.786	9.974	.396	.427	2.294	33.907
10	10.75	10.020	.365	33.772	31.479	90.763	78.855	11.908	.355	.381	1.826	40.483
11	11.75	11.	.375	36.914	34.558	108.434	95.033	13.401	.325	.347	1.51	45.028
12	12.75	12.	.375	40.055	37.7	127.677	113.098	14.579	.299	.319	1.27	48.985
14	14.0	13.25	.375	43.982	41.626	153.938	137.887		.273	.288		
16	16.0	15.25	.375	47.909	45.266	201.062	182.655		.239	.250		
18	18.0	17.25	.375	56.549	54.193	254.470	239.706		.212	.221		
20	20.0	19.25	.375	62.832	60.476	314.159	291.040		.191	.198		
22	22.0	21.25	.375	69.115	66.759	380.143	354.657		.174	.180		
24	24.0	23.25	.375	75.398	73.042	452.390	424.558		.159	.164		

Various types of Carey Mineral Wool blankets

STYLE NO. 200—1-in. galvanized wire mesh both sides.
For flexibility—no plaster base.

STYLE NO. 201—1-in. galvanized wire mesh one side—expanded metal lath other side.
For flexibility and plaster base one side.

STYLE NO. 202—Metal lath both sides.
For flexibility and plaster base both sides.

STYLE NO. 203—3/4-in. rib lath (rib in) one side—1-in. galvanized wire mesh other side.
Rigid one side and plaster base one side.

STYLE NO. 203A—3/4-in. rib lath (rib out) one side—1-in. galvanized wire mesh other side.
Rigid one side and furnishes a 3/4-in. air space—no plaster base.

STYLE NO. 204—3/4-in. rib lath (rib in) one side—metal lath other side.
Rigid one side and plaster base both sides.

STYLE NO. 204A—3/4-in. rib lath (rib out) one side—metal lath other side.
Rigid one side with 3/4-in. air space and plaster base one side.

STYLE NO. 205—3/4-in. rib lath (rib in) one side—1-in. galvanized wire mesh other side.
Rigid one side and plaster base one side.

STYLE NO. 205A—3/4-in. rib lath (rib out) one side—1-in. galvanized wire mesh other side.
Rigid one side and furnishes a 3/4-in. air space—no plaster base.

STYLE NO. 206—3/4-in. rib lath (rib in) one side—metal lath other side.
Rigid one side and plaster base both sides.

STYLE NO. 206A—3/4-in. rib lath (rib out) one side—metal lath other side.
Rigid one side with 3/4-in. air space and plaster base one side.

STYLE NO. 208—3/4-in. rib lath (rib in) both sides.
Rigid both sides and plaster base both sides.

STYLE NO. 209—3/4-in. rib lath (rib out) one side—3/4-in. rib lath (rib in) other side.
Rigid both sides and furnishes 3/4-in. air space one side and plaster base other side.

LIST PRICES PER SQUARE FOOT

The bold figures immediately below the list prices indicate the approximate shipping weight per square foot.

STYLE	1" THICK	1 1/2" THICK	2" THICK	2 1/2" THICK	3" THICK	3 1/2" THICK	4" THICK	5" THICK	6" THICK
200	\$0.40 1.50	\$0.50 2.05	\$0.60 2.60	\$0.70 3.25	\$0.80 3.85	\$0.88 4.40	\$0.95 5.00	\$1.10 6.20	\$1.25 7.45
201	0.45 1.65	0.60 2.20	0.70 2.75	0.80 3.40	0.90 4.00	0.98 4.55	1.05 5.15	1.20 6.35	1.35 7.60
202	0.55 1.75	0.65 2.00	0.75 2.85	0.85 3.50	.095 4.10	1.03 4.65	1.10 5.25	1.25 6.45	1.40 7.70
203	0.60 1.85	0.70 2.40	0.80 2.95	0.90 3.60	1.00 4.20	1.08 4.75	1.15 5.35	1.30 6.55	1.45 7.80
203A	0.60 1.85	0.70 2.40	0.80 2.95	0.90 3.60	1.00 4.20	1.08 4.75	1.15 5.35	1.30 6.55	1.45 7.80
204	0.60 2.00	0.70 2.55	0.80 3.10	0.90 3.75	1.00 4.35	1.08 4.90	1.15 5.50	1.30 6.70	1.45 7.95
204A	0.60 2.00	0.70 2.55	0.80 3.10	0.90 3.75	1.00 4.35	1.08 4.90	1.15 5.50	1.30 6.70	1.45 7.95
205	0.70 2.10	0.80 2.65	0.90 3.20	1.00 3.85	1.10 4.45	1.18 5.00	1.25 5.60	1.45 6.80	1.65 8.05
205A	0.70 2.10	0.80 2.65	0.90 3.20	1.00 3.85	1.10 4.45	1.18 5.00	1.25 5.60	1.45 6.80	1.65 8.05
206	0.75 2.25	0.90 2.75	1.00 3.30	1.10 3.95	1.20 4.55	1.28 5.20	1.35 5.70	1.55 6.90	1.75 8.15
206A	0.75 2.25	0.90 2.75	1.00 3.30	1.10 3.95	1.20 4.55	1.28 5.20	1.35 5.70	1.55 6.90	1.75 8.15
208	0.75 2.25	0.90 2.80	1.00 3.35	1.10 4.00	1.20 4.60	1.28 5.25	1.35 5.75	1.55 6.95	1.75 9.00
209	0.75 2.25	0.90 2.80	1.00 3.35	1.10 4.00	1.20 4.60	1.28 5.25	1.35 5.75	1.55 6.95	1.75 9.00

Above prices are for Carey Mineral Wool Blankets in standard size sheets, 2x4 ft. or 2x8 ft., packed in cartons 24 1/2" wide x 18" deep, inside dimensions.

FITTINGS AND FLANGES

FREIGHT TABLES

Fittings and Flanges—Insulation Areas

FLANGED FITTINGS			FLANGES		
PIPE SIZE INCHES	AVERAGE SQ. FT. AREA OF METAL SURFACE	SQ. FT. CEMENT USED SOLID	PIPE SIZE INCHES	SQUARE FOOT BLOCKS	SQ. FT. CEMENT 1/2" THICK OVER 1 1/2" BLOCKS
2 1/2	0.7	1.0	2 1/2	1.0	2.4
3	0.9	1.3	3	1.2	2.6
3 1/2	1.0	1.5	3 1/2	1.4	2.7
4	1.2	1.7	4	1.6	2.9
4 1/2	1.5	1.9	4 1/2	1.7	3.0
5	1.7	2.1	5	1.8	3.3
6	2.2	2.6	6	2.1	3.5
7	2.7	3.3	7	2.4	4.0
8	3.3	3.5	8	2.7	4.5
9	4.0	4.5	9	3.1	4.8
10	4.5	5.0	10	3.7	5.0
12	6.3	6.8	12	4.4	6.7
14	8.3	9.0	14	4.8	7.0
16	9.7	10.5	16	6.0	9.0
18	12.0	13.0	18	6.8	10.0
20	14.5	15.5	20	7.7	11.0
22	17.3	18.5	22	8.7	12.2
24	21.0	22.3	24	10.0	13.4
26	24.0	25.0	26	11.0	14.7
28	27.0	28.5	28	13.0	16.0
30	30.0	31.0	30	14.5	18.0

USE METAL AREA to secure area of blocks.

For area of 1/2-in. cement over 1-in. block use 133 1/3% of metal area.

For area of 1/2-in. cement over 1 1/2-in. block use 140% of metal area.

For area of 1/2-in. cement over 2-in. block use 150% of metal area.

The second column under fittings indicates the square-foot area of blocks required to cover them while the third column shows the square-foot area of cement used solid.

THE SECOND COLUMN UNDER FLANGES indicates the square-foot area of block insulation required to cover them, while the third column shows the square-foot area of cement 1/2 in. thick used over 1 1/2-in. thick blocks.

Asbestos cement for standard fittings

THIS TABLE gives the approximate number of pounds of asbestos cement which will cover standard screwed fittings and flanges 1 in. thick. It is based upon asbestos cement having a covering capacity of 15 sq. ft. 1 in. thick per 100-lb. bag.

If 85% Magnesia cement is used, one-fourth the amount will be required.

Where fittings are covered flush with adjacent 1-in. thick pipe covering only approximately 1/2-in. thickness is required and consequently one-half the amount specified in this table.

For flanged fittings figure the amount required for screwed fittings and in addition the amount required for the number of sets of flanges on each flanged fitting.

Where sleeves of sectional covering or blocks are used around the outer surface of flanges only one-third the amount of cement specified in the table will be needed for filling cracks and filling in space between such sleeve and the outer surface of 1-in. thick pipe covering.

For 45-degree ells approximately one-half the amount specified for 90-degree ells will be required.

For long radius ells approximately two times the amount specified for 90-degree ells will be required.

approximate freight tables

To obtain approximate freight in per cent of list price for any rate of freight multiply the percentage given in table by the freight rate in dollars: For example, to determine the freight cost of Magnesia covering when the freight rate is 35c per cwt.: 5.0% x \$0.35—1.75% of the list price.

NOMINAL PIPE SIZE, INCHES	POUNDS ASBESTOS CEMENT			
	90° ELLS	VALVES AND TEES	CROSSES	ONE PAIR FLANGES
1/4, 3/4, and 1	2.0	2.5	2.7	4.5
1 1/4, 1 1/2, and 2	3.5	4.3	4.7	6.1
2 1/2 and 3	6.0	7.5	8.0	8.9
3 1/2 and 4	9.0	12.3	12.0	13.1
4 1/2 and 5	12.5	15.6	16.7	14.1
6	15.0	18.8	20.0	16.4
7	18.5	23.1	24.3	19.0
8	19.5	24.2	26.0	22.0
9	24.0	30.0	32.0	26.0
10	29.0	36.1	38.9	27.5
12	37.5	47.0	50.0	38.0

THE FOLLOWING TABLE shows the approximate freight cost for various coverings in per cent of list price, based on \$1.00 per cwt. freight rate.

85% Magnesia Blocks	6.0%
85% Magnesia Covering	5.0%
Air Cell Covering (2-ply)	1.9%
Air Cell Covering (3-ply)	2.8%
Air Cell Covering (4-ply)	3.5%
Carocel Covering (1/2" th.)	2.9%
Carocel Covering (3/4" th.)	5.0%
Carocel Covering (1" th.)	6.0%
Hi-Temp No. 19 Blocks	8.5%
Tempchek Pipe Covering	7.5%
Impervo Covering (1/2" th.)	3.3%
Impervo Covering (3/4" th.)	4.6%
Impervo Covering (1" th.)	6.3%
Multi-Ply Covering (1" th.)	8.5%
Perfecto Covering (1/2" th.)	3.0%
Perfecto Covering (3/4" th.)	4.3%
Perfecto Covering (1" th.)	5.9%
Protecto Covering (1" th.)	5.0%

LOSSES FROM HORIZONTAL BARE STEAM PIPES

EFFICIENCIES OF PIPE COVERINGS

Steam press.	Hot Water			10 lbs.		80 lbs.		120 lbs.		160 lbs.		200 lbs.		200 lbs. and 100° F. Superheat		275 lbs. and 250° F. Superheat		
Temp.	180° F.			239.4° F.		324.0° F.		350.0° F.		370.7° F.		387.9° F.		487.9° F.		664.3° F.		
Pipe size, in.	Dollars Loss	Lbs. Coal	B.t.u. per Lin. Ft. Diff. per hr.	Dollars Loss	Lbs. Coal	B.t.u. per Lin. Ft. Diff. per hr.	Dollars Loss	Lbs. Coal	B.t.u. per Lin. Ft. Diff. per hr.	Dollars Loss	Lbs. Coal	B.t.u. per Lin. Ft. Diff. per hr.	Dollars Loss	Lbs. Coal	B.t.u. per Lin. Ft. Diff. per hr.	Dollars Loss	Lbs. Coal	B.t.u. per Lin. Ft. Diff. per hr.
½	1.09	435	.550	1.95	778	.617	3.55	1420	.736	4.14	1658	.776	4.63	1852	.805	5.09	2034	.835
1	1.62	648	.819	2.93	1172	.929	5.34	2136	1.11	6.25	2500	1.17	7.01	2805	1.22	7.67	3070	1.26
1½	2.27	910	1.15	4.11	1651	1.31	7.62	3050	1.58	8.78	3515	1.65	9.87	3950	1.72	10.80	4320	1.77
2	2.79	1115	1.41	5.02	2005	1.59	9.21	3690	1.91	10.79	4320	2.02	12.14	4850	2.11	13.30	5310	2.18
2½	3.32	1328	1.68	6.03	2407	1.91	11.05	4420	2.29	12.90	5170	2.42	14.50	5770	2.52	15.90	6360	2.61
3	4.00	1597	2.02	7.25	2900	2.30	13.26	5310	2.75	15.48	6200	2.90	17.50	6950	3.04	19.10	7630	3.13
3½	4.51	1803	2.28	8.16	3265	2.59	15.00	6010	3.11	17.50	7010	3.28	19.67	7870	3.42	21.70	8670	3.56
4	5.04	2016	2.55	9.11	3644	2.89	16.80	6720	3.48	19.57	7840	3.67	22.05	8810	3.83	24.10	9640	3.96
4½	5.54	2215	2.80	10.00	4010	3.18	18.41	7380	3.82	21.55	8630	4.04	24.30	9700	4.22	26.75	10700	4.39
5	6.02	2444	3.09	11.10	4436	3.52	20.40	8170	4.23	23.90	9570	4.48	26.90	10760	4.68	29.65	11860	4.87
6	7.22	2885	3.65	13.20	5280	4.19	24.10	9650	5.00	28.35	11350	5.31	31.70	12700	5.52	34.90	13950	5.73
7	8.23	3290	4.16	15.00	6000	4.76	27.50	11000	5.70	32.12	12850	6.02	36.30	14500	6.30	39.80	15920	6.54
8	9.16	3685	4.66	16.76	6710	5.32	31.10	12450	6.45	36.30	14520	6.80	40.70	16280	7.08	44.70	17850	7.33
9	10.18	4073	5.15	18.52	7410	5.88	34.10	13650	7.07	40.00	16020	7.50	45.00	18000	7.83	49.55	19820	8.14
10	11.30	4524	5.72	20.60	8240	6.54	37.95	15200	7.87	44.40	17750	8.31	50.10	20030	8.71	55.00	21960	9.02
12	13.28	5310	6.72	24.23	9700	7.69	44.64	17870	9.26	52.30	20940	9.80	58.80	23550	10.24	64.80	25900	10.63
14	14.40	5770	7.29	26.30	10530	8.35	48.25	19450	10.07	57.10	22860	10.70	64.00	25620	11.14	70.50	28200	11.58
16	16.28	6520	8.24	29.70	11900	9.43	54.90	22000	11.40	64.80	25900	12.13	72.60	29050	12.63	80.00	32000	13.13
18	18.28	7320	9.25	33.10	13250	10.50	61.70	24700	12.80	72.20	28900	13.53	81.30	32540	14.15	89.60	35830	14.71

From 100 Lineal Feet of Pipe per Month of 30 Days
With Steam in Pipes 24 Hours per Day. Coal at \$4.00 per
Ton of 2,000 Lbs.

In these tables coal has been figured at \$4.00 per ton
of 2,000 lbs.—13,000 B.t.u. per pound of coal—labor,
boiler room expense, etc., taken at \$1.00 per ton, making

total value of coal fired at \$5.00 per ton. Boiler efficiency
taken at 70 per cent. Air temperature 80° F. Experimental
data obtained at the Mellon Institute.

Efficiencies of pipe coverings

STEAM PRESSURE.....		0		10 lbs.		80 lbs.		120 lbs.		160 lbs.		200 lbs.		200 POUNDS AND 100° F. SUPERHEAT		275 POUNDS AND 250° F. SUPERHEAT	
STEAM TEMPERATURE °F.....		180° F. 100° F.		239.4° F. 159.4° F.		324.0° F. 244.0° F.		350.0° F. 270.0° F.		370.7° F. 290.7° F.		387.9° F. 307.9° F.		487.9° F. 407.9° F.		664.3° F. 584.3° F.	
TEMPERATURE DIFFERENCE °F.....																	
Insulation material	Thickness Inches	Pipe Size Inches	% Eff.	Loss	% Eff.	Loss	% Eff.	Loss	% Eff.	Loss	% Eff.	Loss	% Eff.	Loss	% Eff.	Loss	% Eff.
85% MAGNESIA	Std.	3	80.1	40.1	82.1	65.8	84.5	104.6	85.2	117.1	85.6	127.4	86.0	136.0	87.9	188.0	90.4
		6	82.6	63.3	84.3	104.0	86.5	165.2	87.1	185.0	87.5	201.0	87.8	214.6	89.5	297.0	91.8
		12	86.6	90.0	88.0	147.3	89.7	234.4	90.1	262.6	90.4	285.5	90.7	304.7	92.1	420.3	93.8
	1 1/2	3	84.4	31.5	85.9	51.7	87.9	81.9	88.4	91.7	88.8	99.6	89.0	106.2	90.5	146.7	92.6
		6	85.9	51.4	87.3	84.2	89.1	133.9	89.5	149.9	89.9	162.9	90.2	173.8	91.5	239.4	93.4
		12	86.6	90.0	88.0	147.3	89.7	234.4	90.1	262.6	90.4	285.5	90.7	304.7	92.1	420.3	93.8
	2	3	87.0	26.2	88.3	42.9	89.9	68.1	90.4	76.2	90.6	82.8	90.9	88.3	92.2	121.6	93.8
		6	88.5	42.0	89.6	68.7	91.1	109.0	91.5	122.1	91.8	132.7	92.0	141.5	93.1	194.7	94.6
		12	89.3	71.9	90.4	117.7	91.8	187.2	92.1	209.5	92.4	227.6	92.6	242.8	93.7	335.3	95.1
	3	3	89.8	20.5	90.8	33.6	92.1	53.3	92.4	59.7	92.7	64.8	92.9	69.1	93.9	95.3	95.2
		6	91.3	31.6	92.2	51.7	93.3	82.0	93.6	91.7	93.8	99.6	94.0	106.2	94.8	146.3	96.0
		12	92.1	52.8	93.0	86.2	94.0	136.8	94.2	153.1	94.4	166.5	94.6	177.6	95.4	243.6	96.4
ASBESTOS- SPONGE	1	3	80.6	39.1	82.2	65.4	84.5	104.9	84.8	119.7	85.2	130.8	85.6	140.0	87.3	197.2	89.7
		6	82.0	65.7	83.4	109.9	85.4	178.9	85.9	201.7	86.4	218.7	86.6	236.2	88.3	332.7	90.6
		12	82.6	117.2	84.0	196.3	85.9	319.8	86.4	360.5	86.8	393.8	87.1	422.1	88.8	596.5	91.0
	1 1/2	3	85.1	30.1	86.3	50.2	88.2	80.2	88.4	91.6	88.7	100.0	89.0	107.1	90.3	150.4	92.2
		6	86.6	49.0	87.6	81.8	89.2	132.9	89.6	149.7	89.9	163.3	90.1	174.9	91.3	246.1	93.1
		12	87.2	85.8	88.3	143.3	89.8	233.0	90.1	262.4	90.4	286.4	90.6	306.6	91.8	433.1	93.5
	2	3	87.6	25.1	88.6	41.8	90.1	66.8	90.3	76.3	90.6	83.2	90.8	89.0	91.9	125.1	93.5
		6	89.0	40.1	89.9	66.9	91.2	108.5	91.5	122.1	91.7	133.0	91.9	142.4	92.9	200.7	94.4
		12	89.8	68.7	90.6	114.6	91.8	186.0	92.1	209.6	92.3	228.8	92.5	245.1	93.5	344.2	94.8
	3	3	90.3	19.6	91.1	32.8	92.3	52.4	92.4	59.8	92.6	65.1	92.8	69.7	93.7	98.0	94.9
		6	91.7	30.2	92.4	50.3	93.3	81.8	93.6	92.1	93.8	100.4	93.9	107.5	94.7	150.6	95.8
		12	92.5	50.4	93.2	83.8	94.0	136.6	94.3	152.5	94.8	166.3	94.6	177.8	95.3	250.7	96.4
AIR CELL	1/2	3	60.2	80.3	62.3	138.4	65.3	235.2	66.0	268.4	.....	.....	.....	.....	.....	.....	.....
		6	61.4	140.6	63.4	242.3	66.5	411.5	67.2	469.5	.....	.....	.....	.....	.....	.....	.....
		12	61.9	256.2	63.9	442.3	66.9	752.9	67.7	859.5	.....	.....	.....	.....	.....	.....	.....
	3/4	3	69.3	62.0	71.0	106.6	73.4	179.8	74.1	204.9	.....	.....	.....	.....	.....	.....	.....
		6	70.7	106.7	72.3	183.0	74.8	309.0	75.5	351.9	.....	.....	.....	.....	.....	.....	.....
		12	71.4	192.2	73.0	330.2	75.4	559.2	76.0	637.5	.....	.....	.....	.....	.....	.....	.....
	1	3	74.4	51.7	75.9	88.4	78.0	148.7	78.6	169.1	.....	.....	.....	.....	.....	.....	.....
		6	76.2	86.8	77.5	148.6	79.6	250.1	80.1	284.7	.....	.....	.....	.....	.....	.....	.....
		12	77.0	154.9	78.3	265.5	80.3	447.1	80.9	509.0	.....	.....	.....	.....	.....	.....	.....

THE TERM "EFFICIENCY" as used in connection with pipe covering means the per cent of reduction of heat loss from bare pipes by the use of pipe covering; i.e., the saving expressed in per cent of bare pipe loss. Example: A given

length of bare steam piping loses the equivalent of 100 lbs. of coal per hour. A pipe covering having an efficiency of 85 per cent and used over this pipe would save 85 lbs. of coal per hour.

The columns headed "loss" give the loss in B.t.u. per lineal foot of pipe at the temperature difference indicated, per hour. All data from tests conducted at Mellon Institute of Industrial Research.

PROPERTIES OF SATURATED STEAM STANDARD AREA TABLES

ABSOLUTE PRESSURE IN POUNDS PER SQ. INCH	TEMPERATURE IN DEGREES F.	HEAT UNITS IN LIQUID ABOVE 32° F.	HEAT OF VAPORIZATION (LATENT HEAT)	TOTAL HEAT UNITS IN STEAM ABOVE 32° F.	DENSITY POUNDS PER CU. FOOT	SP. VOL. CU. FOOT PER POUND STEAM
5	162.28	130.1	1000.3	1130.5	0.01364	73.3
10	193.22	161.1	982.0	1143.1	0.02606	38.4
14.7	212.0	180.0	970.4	1150.4	0.03732	26.8
20	228.0	196.1	960.0	1156.2	0.04980	20.1
30	250.3	218.8	945.1	1163.9	0.0728	13.7
40	267.3	236.1	933.3	1169.4	0.0953	10.5
50	281.0	250.1	923.5	1173.6	0.1175	8.5
60	292.7	262.1	914.9	1177.0	0.1394	7.2
70	302.9	272.6	907.2	1179.8	0.1612	6.2
80	312.0	282.0	900.3	1182.3	0.1829	5.5
90	320.3	290.5	893.9	1184.4	0.2044	4.9
100	327.8	298.3	888.0	1186.3	0.2258	4.4
110	334.8	305.5	882.5	1188.0	0.2472	4.0
120	341.3	312.3	877.2	1189.6	0.2683	3.7
130	347.4	318.6	872.3	1191.0	0.2897	3.5
140	353.1	324.6	867.6	1192.2	0.3107	3.2
150	358.5	330.2	863.2	1193.4	0.3320	3.0
160	363.6	335.6	858.8	1194.5	0.3529	2.8
170	368.5	340.7	854.7	1195.4	0.3738	2.7
180	373.1	345.6	850.8	1196.4	0.3948	2.5
190	377.6	350.4	846.9	1197.3	0.4157	2.4
200	381.9	354.9	843.2	1198.1	0.437	2.3
225	391.5	365.0	834.8	1199.8	0.489	2.1
250	401.1	375.2	826.3	1201.5	0.541	1.9
275	409.3	384.0	818.8	1202.8	0.593	1.7
300	417.5	392.7	811.3	1204.1	0.645	1.6
325	424.7	400.5	804.6	1205.1	0.698	1.5
350	431.9	408.2	797.8	1206.1	0.750	1.3
375	438.4	415.	792.	1207.	0.81	1.3
400	444.8	422.	786.	1208.	0.86	1.2
425	450.7	429.	780.	1208.	0.91	1.1
450	456.5	435.	774.	1209.	0.96	1.0
475	461.9	442.	768.	1209.	1.02	1.0
500	467.3	448.	762.	1210.	1.08	0.9
525	472.3	454.	757.	1210.	1.14	0.9
550	477.3	459.	751.	1210.	1.20	0.8
575	482.0	464.	746.	1210.	1.26	0.8
600	486.6	469.	741.	1210.	1.32	0.8
625	490.9	474.	732.	1205.	1.37	0.7
650	495.2	478.	722.	1200.	1.41	0.7
675	499.3	484.	717.	1199.	1.47	0.7
700	503.4	487.	711.	1198.	1.52	0.7

Absolute pressure—gauge pressure+14.7.

THE STEAM TABLE ABOVE is reprinted in part from Marks and Davis, Tables and Diagrams of the "Thermal Properties of Saturated and Superheated Steam" by permission of the publishers Messrs. Longmans, Green & Co.

TABLE AT RIGHT

Areas for Flat, Curved and Tapered Blocks 6 in. wide.

For 3-in. wide blocks multiply area shown by 0.5.

For 9-in. wide blocks multiply area shown by 1.5.

For 12-in. wide blocks multiply area shown by 2.0.

Retain all decimals in all cases.

*All blocks curved to a radius less than 16½-in. are figured on segmental Pipe Covering basis.

for Blocks and Lagging

FLAT BLOCKS		CURVED BLOCKS—OVER 16½-IN. RADIUS*			
THICKNESS		LESS THAN 1½ INCHES	1½ INCHES TO 2 INCHES INCLUSIVE	OVER 2 INCHES	
LENGTH BLOCK INCHES	AREA BLOCK SQUARE FEET	AREA BLOCK SQUARE FEET	AREA BLOCK SQUARE FEET	AREA BLOCK SQUARE FEET	
½	.002	.002	.002	.002	
¼	.002	.002	.002	.002	
⅓	.006	.006	.006	.006	
¼	.010	.010	.012	.012	
⅓	.016	.016	.016	.016	
½	.020	.022	.022	.022	
¾	.026	.028	.028	.028	
¾	.032	.032	.034	.034	
¾	.036	.038	.038	.040	
1	.042	.044	.044	.044	
2	.084	.088	.088	.090	
3	.126	.132	.132	.134	
4	.166	.176	.178	.178	
5	.208	.220	.222	.224	
6	.250	.264	.266	.268	
7	.292	.306	.310	.312	
8	.334	.350	.354	.358	
9	.376	.394	.398	.402	
10	.416	.438	.442	.448	
11	.458	.482	.486	.492	
12	.500	.526	.532	.536	
13	.542	.570	.576	.582	
14	.584	.614	.620	.626	
15	.626	.658	.664	.670	
16	.666	.702	.708	.716	
17	.708	.746	.752	.760	
18	.750	.790	.796	.804	
19	.792	.832	.842	.850	
20	.834	.876	.886	.894	
21	.876	.920	.930	.938	
22	.916	.964	.974	.984	
23	.958	1.008	1.018	1.028	
24	1.000	1.052	1.062	1.072	
25	1.042	1.096	1.106	1.118	
26	1.084	1.140	1.152	1.162	
27	1.126	1.184	1.196	1.208	
28	1.166	1.228	1.240	1.252	
29	1.208	1.272	1.284	1.296	
30	1.250	1.316	1.328	1.342	
31	1.292	1.358	1.372	1.386	
32	1.334	1.402	1.416	1.430	
33	1.376	1.446	1.460	1.476	
34	1.416	1.490	1.506	1.520	
35	1.458	1.534	1.550	1.564	
36	1.500	1.578	1.594	1.610	
37	1.542	1.622	1.638	1.654	
38	1.584	1.666	1.682	1.698	
39	1.626	1.710	1.726	1.744	
40	1.666	1.754	1.770	1.788	
41	1.708	1.798	1.815	1.832	
42	1.750	1.842	1.860	1.877	

CAREY SUPER-LIGHT 85% MAGNESIA

List Prices (per linear foot) and Thickness Schedules

COPPER TUBING				STANDARD STEEL OR W. I. PIPE													
Pipe Size	Pipe O. D.	Nominal 1" Thick		Pipe Size	Pipe O. D.	Nominal 1" Thick		*Minimum Double Layer		Nominal 1½" Thick		Nominal 2" Thick		Nominal 2½" Thick		Nominal 3" Thick	
		Th'k	List			Th'k	List	Th'k	List	Th'k	List	Th'k	List	Th'k	List	Th'k	List
.....				¼"	.540	1½	2 \$.22	2½	\$.65	.....	.....	.....	.....	.....	.....	.....	.....
¾"	.500	1½	.22	¾"	.675	1½	2½ .22	2½	.65	.....	.....	.....	.....	.....	.....	.....	.....
½"	.625	1½	.22	½"	.840	1	2½ .22	2½	.65	1½	3½ \$.46	2½	4½ \$.75	2½	5 \$1.00	2½	\$1.20
¾"	.875	1	.24	¾"	1.050	2½	2½ .24	1½	.70	1½	3½ .49	1½	4½ .80	2½	6 1.05	3½	1.35
1"	1.125	¾	.27	1"	1.315	1½	3 .27	2½	.75	1½	4 .52	2½	5 .85	2½	6 1.10	3½	1.40
1¼"	1.375	1½	.30	1¼"	1.660	2½	3 .30	1½	.80	1½	4½ .56	1½	5 .90	2½	6 1.15	3½	1.45
1½"	1.625	1½	.30	1½"	1.900	1½	3½ .33	2½	.85	1½	4½ .60	2½	6 .95	2½	7 1.20	3½	1.55
2"	2.125	1½	.36	2"	2.375	1½	4 .36	2½	.90	1½	5 .64	2½	6 1.00	2½	7 1.25	3½	1.65
2½"	2.625	1½	.40	2½"	2.875	1½	4½ .40	2½	1.00	1½	5 .70	2½	7 1.05	2½	7 1.35	3½	1.75
3"	3.125	1½	.45	3"	3.500	1½	5 .45	2½	1.10	1½	6 .76	2½	7 1.15	2½	8 1.50	3½	1.90
3½"	3.625	2½	.50	3½"	4.000	1½	6 .50	2½	1.20	1½	6 .82	2½	8 1.25	2½	9 1.65	3½	2.05
4"	4.125	1½	.60	4"	4.500	1½	6 .60	2½	1.40	1½	7 .88	2½	8 1.35	2½	9 1.80	3½	2.20
4½"	4.625	.....	.65	4½"	5.000	1½	7 .65	2½	1.50	1½	7 .94	1½	8 1.45	2½	10 1.95	3½	2.35
5"	5.125	1½	.70	5"	5.563	1½	7 .70	2½	1.60	1½	8 1.00	2½	9 1.55	2½	10 2.10	3½	2.50
6"	6.125	1½	.80	6"	6.625	1	8 .80	2½	1.80	1½	9 1.10	2½	10 1.70	2½	11 2.25	3½	2.70
.....				7"	7.625	.....	.....	3" NOMINAL THICKNESS is minimum for 7" and larger.	.....	1½	10 1.20	2½	11 1.85	.....	.....	3½	2.90
.....				8"	8.625	.....	.....		.....	1½	11 1.35	2½	12 2.00	2½	14 2.55	3½	3.15
.....				9"	9.625	.....	.....		.....	1½	12 1.50	2½	14 2.20	2½	15 2.80	3½	3.40
.....				10"	10.75	.....	.....		.....	1½	14 1.65	2½	15 2.40	2½	16 3.05	3½	3.65
.....				11"	11.75	.....	.....		.....	1½	15 1.75	2½	16 2.55	2½	17 3.20	3½	3.90
.....				12"	12.75	.....	.....		.....	1½	16 1.85	2	17 2.70	2½	18 3.40	3½	4.10
.....				14"	14.00	.....	.....		.....	1½	17 2.10	2	18 3.00	2½	19 3.80	3	4.60
.....				15"	15.00	.....	.....		.....	1½	18 2.25	2	19 3.15	2½	20 4.00	3	4.85
.....				16"	16.00	.....	.....		.....	1½	19 2.35	2	20 3.30	2½	21 4.20	3	5.10
.....				17"	17.00	.....	.....		.....	1½	20 2.50	2	21 3.45	2½	22 4.40	3	5.35
.....				18"	18.00	.....	.....	.....	1½	21 2.60	2	22 3.60	2½	23 4.60	3	5.60	

Black figures in thickness columns indicate "prime" solid sections.

Large red figures indicate 2 layer assembled sections. Only nominal 2" and 2½" thick assemblies are cemented to form one piece.

Small red figures in "List" columns indicate outer layer pipe sizes that will make exact fit.

Indicator () means nominal 1" thick.

() means nominal 1½" thick.

() means nominal 2" thick.

Example:—6" pipe size, nominal 3" thick shows 3½ which means first layer nominal 1½" thick, second layer nominal 1½" thick to make total 3½" thick.

*Corresponds to conventional "double standard thick."

†Inner layer sections—outer layer curved blocks.

‡Curved blocks.

NOTE: Orders specifying assembled double layer sections will be priced on the basis of the list prices in above tables for such assemblies.

Sizes over 18"

For sizes over 18", curved blocks approx. 6" wide by 36" long are furnished.

Actual thickness is the same as nominal thickness. List prices per linear foot are as follows:

	19"	20"	21"	22"	23"	24"	26"	27"	28"	30"	32"	33"
1½" Thick	\$2.75	\$2.85	\$3.00	\$3.10	\$3.20	\$3.30	\$3.55	\$3.65	\$3.75	\$4.00	\$4.30	\$4.40
2" Thick	3.80	4.00	4.15	4.30	4.40	4.50	4.85	5.05	5.15	5.50	5.90	6.05
2½" Thick	4.80	5.00	5.20	5.40	5.60	5.75	6.20	6.40	6.65	6.95	7.40	7.60
3" (2-layer)	5.80	6.00	6.25	6.50	6.75	7.00	7.50	7.70	7.95	8.40	9.10	9.20

For pipe sizes over 33", prices are figured on a square foot basis

Flat Blocks

Standard Size 6" wide, 36" long.

Thickness	1"	1½"	2"	2½"	3"
List Price Per Sq. Ft.	\$.30	\$.38	\$.45	\$.60	\$.70

THE PHILIP CAREY MFG. CO., LOCKLAND, CINCINNATI 15, OHIO

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